DxMONITOR

Animal Health Report

Inside this Issue

Summer 1995

The DxMONITOR reports trends of confirmed disease diagnoses and animal health data collected from veterinary diagnostic laboratories and the USDA:APHIS.

The DxMONITOR Animal Health Report is distributed quarterly as part of the Veterinary Diagnostic Laboratory Reporting System (VDLRS). The VDLRS is a cooperative effort of the American Association of Veterinary Laboratory Diagnosticians (AAVLD), the United States Animal Health Association (USAHA), and the United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA:APHIS).

Caution should be taken when extrapolating information reported in the DxMONITOR due to the inherent biases of submitted specimens. Trends should be interpreted with care. A given diagnosis/agent may be the result of a true increase in prevalence, or, it may only reflect a new State testing requirement, a heightened awareness of the condition, or an increase in the number of laboratories reporting data.

Test results are presented as the number positive over the total number tested per State on U.S. maps for the current and previous quarter; and the ratio of the current quarter's positive compared to the average positive for the previous four quarters, by region, plotted on a log base 2 scale. Laboratory reported diseases in Section I are reported as tests. Diseases in Section II are reported as accessions. Increases may be a reflection of the addition of new laboratories and/or laboratories reporting additional diseases not previously reported.

New for this issue: The disease reporting period for new data was January 1 through March 31, 1995. Data have been reported by 28 diagnostic laboratories in the States indicated on the facing page (two on hiatus), the National Veterinary Services Laboratories (NVSL), and the APHIS:Veterinary Services program staffs.

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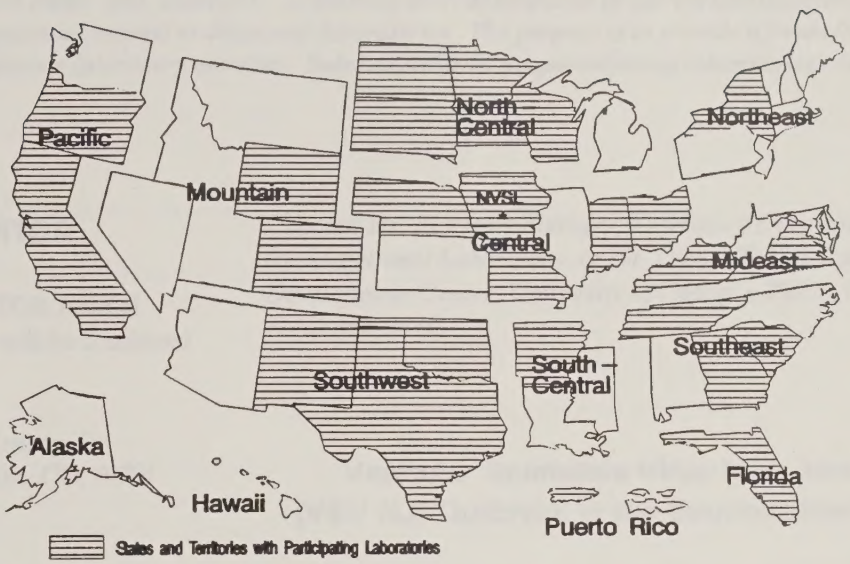
REGIONS OF THE VDLRS

Abbreviations for regions used in this issue are:

AK = Alaska
CL = Central
FL = Florida
HI = Hawaii
MDE = Mideast
MTN = Mountain
NOC = North-Central
NOE = Northeast
PC = Pacific
PR = Puerto Rico & U.S. Virgin Islands
SOC = South-Central
SE = Southeast
SW = Southwest
UNK = Unknown



Contributing Laboratories

The following laboratories contributed data reported in the DxMONITOR Animal Health Report. Thanks to all of the individuals at these laboratories who worked to make this report possible.

- **Arkansas Livestock and Poultry Commission Diagnostic Laboratory (Little Rock, AR)**
- **California Veterinary Diagnostic Laboratory System(Davis, CA)**
- **Colorado Veterinary Diagnostic Laboratories, Colorado State University, (Fort Collins, CO)**
- **Bureau of Diagnostic Laboratories, Florida Department of Agriculture (Kissimmee, FL)**
- **Veterinary Diagnostic Laboratory, University of Georgia (Athens, GA)**
- **Veterinary Diagnostic and Investigational Laboratory, University of Georgia (Tifton, GA)**
- **National Veterinary Services Laboratories (Ames, IA)**
- **Veterinary Diagnostic Laboratory, Iowa State University (Ames, IA)**
- **Animal Disease Diagnostic Laboratory, Purdue University (West Lafayette, IN)**
- **Breathitt Veterinary Center, Murray State University (Hopkinsville, KY)**
- **Livestock Disease Diagnostic Center, University of Kentucky (Lexington, KY)**
- **Minnesota Veterinary Diagnostic Laboratory, University of Minnesota (St. Paul, MN)**
- **Veterinary Medical Diagnostic Laboratory, University of Missouri-Columbia (Columbia, MO)**
- **Veterinary Diagnostic Center, University of Nebraska-Lincoln (Lincoln, NE)**
- **Veterinary Diagnostic Services, New Mexico Department of Agriculture (Albuquerque, NM)**
- **New York State Veterinary Diagnostic Laboratory, Cornell University (Ithaca, NY)**
- **North Dakota Veterinary Diagnostic Laboratory, North Dakota State University (Fargo, ND)**
- **Reynoldsburg Laboratory, Ohio Department of Agriculture (Reynoldsburg, OH)**
- **Oklahoma Animal Disease Diagnostic Laboratory, Oklahoma State University (Stillwater, OK)**
- **Veterinary Diagnostic Laboratory, Oregon State University (Corvallis, OR)**
- **Puerto Rico Animal Diagnostic Laboratory (Dorado, PR)**
- **Clemson Diagnostic Laboratory, Clemson University (Columbia, SC)**
- **Animal Disease Research and Diagnostic Laboratory, South Dakota State University (Brookings, SD)**
- **C.E. Kord Animal Disease Diagnostic Laboratory, Tennessee Department of Agriculture (Nashville, TN)**
- **Pan American Veterinary Laboratories, (Austin, TX)**
- **Texas Veterinary Medical Diagnostic Laboratory, Texas A&M University (College Station, TX)**
- **Bureau of Laboratory Services, Virginia Department of Agriculture and Consumer Services (Richmond, VA)**
- **Central Animal Health Laboratory, Wisconsin Dept. of Agriculture, Trade and Consumer Protection (Madison, WI)**
- **Wyoming State Veterinary Laboratory (Laramie, WY)**

LabNEWS

This section combines two previous sections 'Lab Notes' and 'DxNEWS'. It presents short descriptions of current investigations, outbreaks, news items, or events or articles of potential interest to diagnostic laboratories. The purpose is to provide a forum for timely exchanges of information about veterinary diagnostic laboratory activities. Submissions from nonparticipating laboratories are welcome.

Format Change in DxMONITOR

Beginning with the Summer 1995 DxMONITOR Animal Health Report, 'Lab Notes' and 'DxNEWS' will be combined into one section titled 'LabNEWS.'

Contact: DxMONITOR, USDA:APHIS:VS Centers for Epidemiology and Animal Health, Fort Collins, CO, (970) 490-8000.

Leptospira Abortions in California Dairies

Leptospira abortion storms occurred in five dairies in California. All abortions were in unvaccinated or poorly vaccinated animals. On one farm, 17 of 59 beef animals also aborted. Most of the aborted fetuses were third trimester.

Contact: Dr. Pat Blanchard, California Veterinary Diagnostic Laboratory System, Tulare, CA, (209) 688-7543.

Abortion Storms in Georgia Swine Following Tropical Storms

The incidence of swine abortions in southern Georgia increased following the passage of tropical storms Alberto in July 1994 and Allison in June 1995. Four to five days following Alberto, the Veterinary Diagnostic Laboratory at Tifton, Georgia, received eight submissions from seven herds where large numbers of sows in all stages of gestation aborted within one to two days. Following Allison, submissions from 10 herds with large numbers of abortions were received. Abortions seemed to occur only in herds located in the direct path of the storms. Sows in all affected herds were housed outdoors on dirt. Although infectious agents that could have led to abortions were detected in some herds, stressors such as sunburn and sudden changes in barometric pressure seem to have contributed to these "abortion storms" (50 abortions). Climatologic factors associated with the storms may have also led to an elevated incidence of fetal resorption in early pregnancy sows reported following the storms.

Contact: Dr. François Elvinger, Veterinary Diagnostic and Investigational Laboratory, or Dr. David Bishop, Rural Development Center, University of Georgia, Tifton, GA, (912) 385-3440.

Vesicular Stomatitis Virus-New Jersey (VSV-NJ) Outbreak in the Southwestern U.S.

The southwestern United States is experiencing an outbreak of vesicular stomatitis. The outbreak started in New Mexico and has spread to Arizona, Colorado, Texas, and Utah. Movement and trade restrictions are in place for animals originating from affected States. USDA:APHIS has approved the limited release of a VSV-NJ killed autogenous vaccine for use in cattle and horses. The last major VSV outbreak in the U.S. was in 1982-83 with 1,324 investigations in 14 western States resulting in 617 positive premises.

Table 1 shows the number of premises and species affected as of August 11, 1995. The number currently positive refers to the number of premises that have a positive field diagnosis and confirmation by serology or virus isolation. A premise may have more than one affected species so the totals may not add up. The number currently positive does not include previously positive premises that have been released from quarantine.

Table 1. Currently Premises positive for VSV-NJ.

	Currently Positive Premises			
State	Cattle	Horse	Other	Total
UT		1		1
CO	9	19		22
TX		1		1
NM	32	86	1(llama)	99
Total	41	107	1	123

Some countries are requiring negative VSV tests for animals to be imported. VSV fact sheets on the disease in dairy and beef cattle, and vaccination are available from the contacts below. The University of California-Davis has a video on the dairy outbreak in that State in 1982.

Contact: USDA:APHIS:VS Emergency Programs, Riverdale, MD, (301) 734-8073 or USDA:APHIS:VS Western Regional Office, Englewood, CO, (303) 784-6215.

Update on Bovine Viral Diarrhea (BVD) Virus Disease

In May of 1994, the United States Department of Agriculture (USDA):Animal and Plant Health Inspection Service (APHIS), USDA:Agricultural Research Service (ARS), and selected universities and veterinary diagnostic laboratories participated in an investigation of bovine viral diarrhea (BVD) outbreaks where the acute/peracute manifestation occurred. Results of the initial May investigation appeared in the Summer 1994 DxMONITOR Animal Health Report and in an internal USDA report. This summary reports on a follow-up questionnaire presented to veterinary diagnostic laboratories.

1. What was the 1994 distribution of diseases (including acute/peracute) associated with BVD virus in the U.S.?

In November 1994, a follow-up survey was mailed to the 28 laboratories that had responded to the laboratory questionnaire included in the initial May BVD survey. The follow-up questionnaire requested data, by month in 1994, on the total number of:
- confirmed cases of BVD associated with specific case definitions.
- specific types of bovine accessions.
- tests run for BVD associated with specific submitting complaints.

The initial May survey indicated a wide variety of tests used by laboratories to diagnose BVD and little being done to determine genotype (Type 1 vs. Type 2). The follow-up questionnaire did not request data on type of test run or genotype data for confirmed cases. Thirteen of the 28 laboratories responded to the follow-up questionnaire, with two of the respondents indicating they were unable to provide the requested data.

Of the 11 laboratories that provided data, 10 were able to provide numbers of confirmed cases of BVD for specific manifestations. Six also provided total numbers of bovine accessions, and five provided total numbers of BVD tests. Only two of the eleven laboratories were able to break down bovine accessions by type and tests run by submitting complaint. As a result, the number of laboratories providing information for the following analyses varied.

Of the 28 States responding to the initial May survey, California, Kentucky, Michigan, New York, Ohio, Pennsylvania, and Wisconsin reported confirmed cases of acute/peracute BVD in cattle. The follow-up study added Georgia, Oklahoma, and Tennessee, with cases in 1994. A total of 43 cases of confirmed acute/peracute BVD was reported for 1994 on the follow-up questionnaire (10 laboratories). Cases may have been individual animals or herds, depending on laboratory coding systems.

Figure 1 shows the BVD manifestations for which data were collected. Confirmed cases of acute/peracute BVD accounted for only 9 percent (43/472) of the BVD cases in 1994 for the 10 laboratories reporting. There may have been a reporting bias because the high death loss associated with acute/peracute BVD may have led to higher reporting of this manifestation relative to less dramatic manifestations.

Case definitions used by both investigations for the BVD manifestations were:
- Hemorrhagic syndrome = fever, diarrhea, severe thrombocytopenia, and death.
- Acute/peracute = high fever (107° - 110° F), anorexia, ± diarrhea, rapid progression to death (in 1-2 days).
- Classical mucosal disease = oral and interdigital lesions and diarrhea.
- BVD-associated abortions or other reproductive problems.
- BVD-associated diarrhea.
- BVD-associated pneumonia or other respiratory problems.
- Other = laboratory defined. The other category included persistently infected animals, with or without symptoms; weak calves; calves found dead; and cases where no code was available.

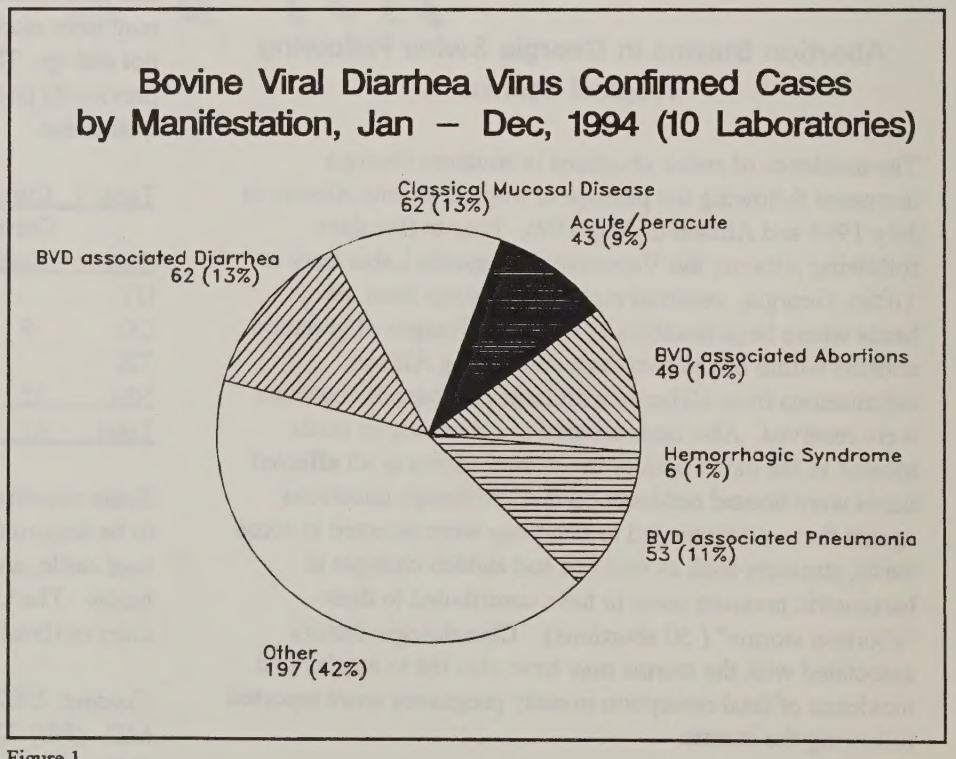


Figure 1

After plotting confirmed BVD cases by manifestation and month, BVD-associated diarrhea and acute/peracute BVD had similar patterns which were different from the other manifestations. Therefore, BVD-associated abortions and pneumonia, classical mucosal disease, and hemorrhagic syndrome were collapsed into the 'other' category for further analysis. Figure 2 shows the number of confirmed cases in 1994, reported by 10 laboratories, for acute/peracute BVD, BVD-associated diarrhea, all other manifestations, and total BVD, by month. The number of confirmed acute/peracute BVD cases was highest in June (11) for the laboratories responding to the follow-up questionnaire.

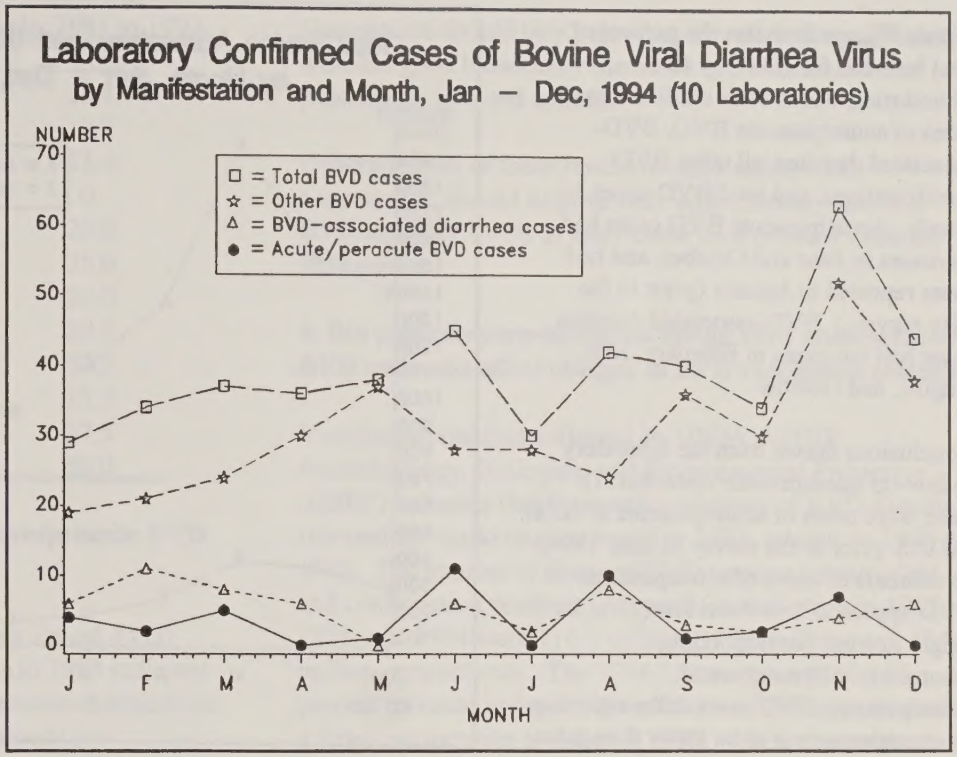


Figure 2

Both the total number of bovine accessions and the total number of BVD tests, by month, showed a peak in March of 1994, a summer decline and a rise again in the fall (Figure 3). Figure 4 (page 4) shows the percent of bovine accessions which were tested for BVD. The percent tested followed the same basic pattern as the number of accessions and tests, except for an increase during June, the time at which the initial reports of acute/peracute BVD began generating concern.

Figure 5 (on page 4) shows the percent of total bovine accessions in 1994, reported by six laboratories, which were confirmed as cases of acute/peracute BVD, BVD-associated diarrhea, all other BVD manifestations, and total BVD cases, by month. Acute/peracute BVD cases showed increases in June and October-November, and there were cases of acute/peracute BVD reported in January 1994 (prior to the May survey.) BVD-associated diarrhea cases increased in June, but were at their highest in February and August.

Canadian sources in Ontario indicate that the number of positive BVD cases per 500 cattle submitted to their Veterinary Laboratory Services peaked at 50 (10 percent) in both August and September 1993. For the six U.S. laboratories providing both number of positive and number of accessions for the BVD follow-up survey, the number of positive BVD cases per 500 accessions peaked at 5.9 (1.2 percent) in December 1994. The number of positive acute/peracute BVD cases per 500 accessions was highest in June 1994 at 1.6 (0.32 percent). Even at its worst, the reporting laboratories appear to have been affected much less than Ontario.

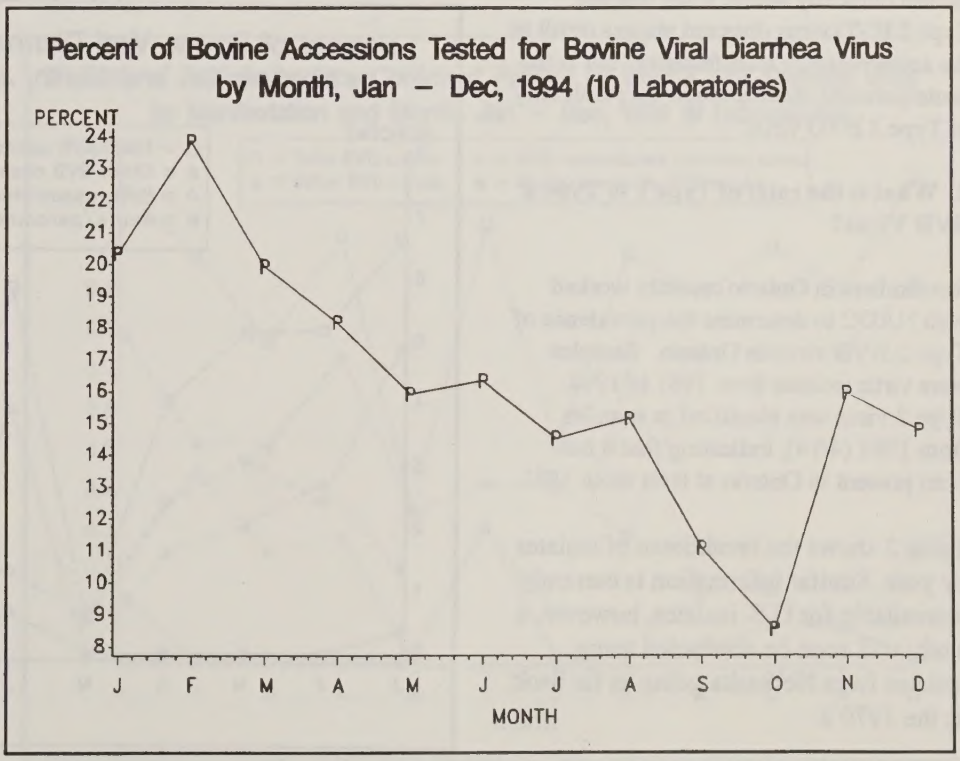


Figure 3

Figure 6 (page 5) shows the percent of total tests run for BVD, by five laboratories, which were confirmed as cases of acute/peracute BVD, BVD-associated diarrhea, all other BVD manifestations, and total BVD cases, by month. Acute/peracute BVD cases had increases in June and October, and had cases reported in January (prior to the May survey.) BVD-associated diarrhea cases had increases in February, June, August, and October.

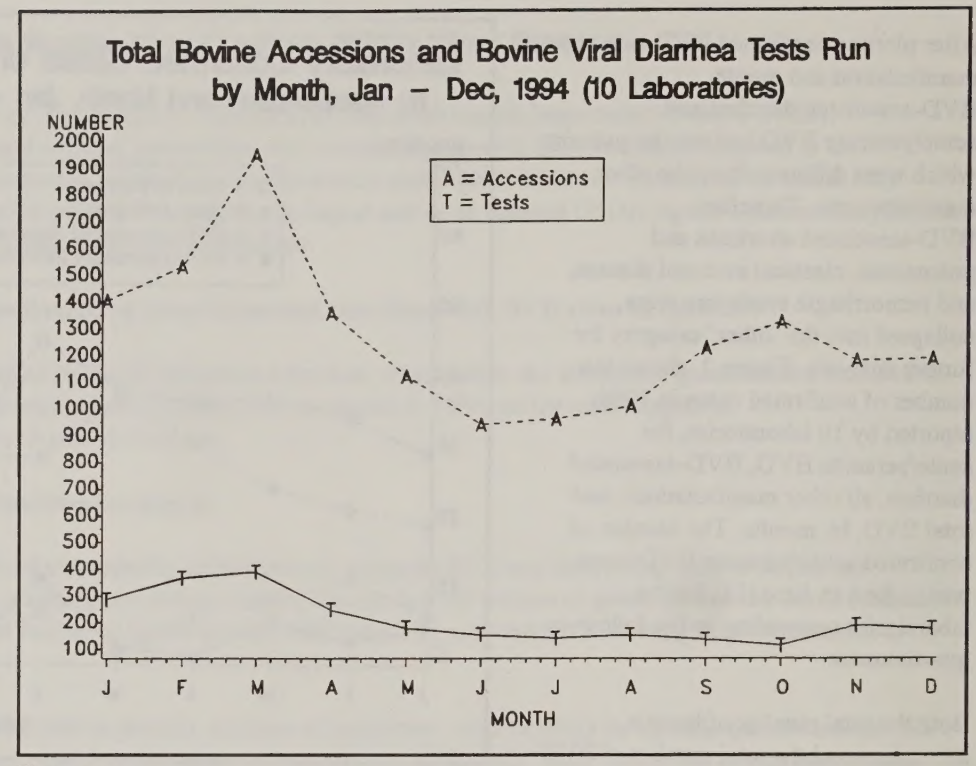


Figure 4

Conclusions drawn from the laboratory follow-up questionnaire were that: 1) there were cases of acute/peracute BVD in the U.S. prior to the survey in May 1994, 2) numbers of cases of acute/peracute BVD appear to have been low (11 at its height in June, for responding laboratories), 3) numbers of acute/peracute BVD cases at the reporting laboratories appear to be lower than those reported during the Ontario outbreak, and 4) the peaks in confirmed cases of acute/peracute BVD and BVD-associated diarrhea in June and October may have been at least partially related to USDA dissemination of information on the May survey and later publication in producer journals.

No data were collected on genotypes for the various manifestations since few laboratories have the facilities to genotype BVD virus. Researchers at the USDA:ARS:National Animal Disease Center (NADC) indicate that Type 2 BVD virus has been isolated from cases of hemorrhagic syndrome, BVD-associated diarrhea, BVD-associated abortion, and classical mucosal disease, as well as acute/peracute BVD. Historically, Type 1 BVD virus has caused clinically severe acute disease. Type 2 BVD virus does not always result in the acute/peracute manifestation, nor is the acute/peracute manifestation the result only of Type 2 BVD virus.

2. What is the ratio of Type 1 to Type 2 BVD Virus?

Researchers in Ontario recently worked with NADC to determine the prevalence of Type 2 BVD virus in Ontario. Samples were virus isolates from 1981 to 1994. Type 2 virus was identified in samples from 1981 (4/14), indicating that it has been present in Ontario at least since 1981.

Table 2 shows the breakdown of isolates by year. Similar information is currently unavailable for U.S. isolates, however, a study will soon be conducted using isolates from Nebraska going as far back as the 1970's.

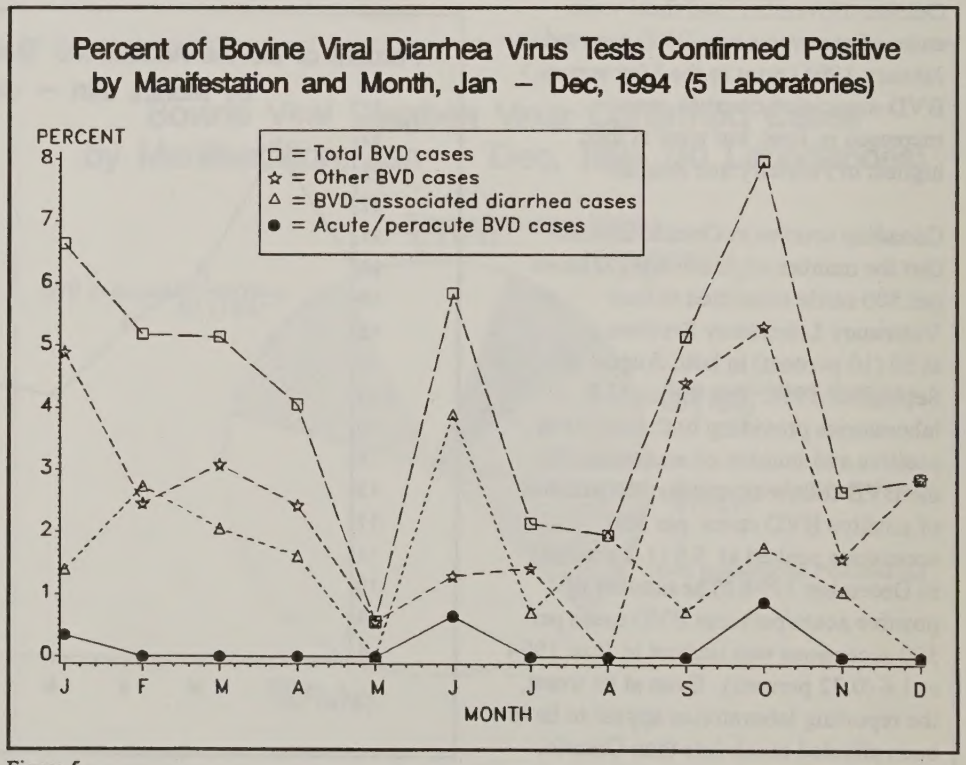


Figure 5

Table 2. Isolate genotype in Ontario, Canada, 1981 to 1994.

Year	Type 1	Type 2	% Type 2
1981	10	4	28.6
1984	12	1	7.7
1985	19	3	13.6
1986	4	0	0
1987	3	1	25.0
1988	3	1	25.0
1989	3	1	25.0
1990	5	2	28.6
1991	5	3	37.5
1992	7	1	12.5
1993	5	3	37.5
1994	4	4	50.0

3. What is the risk to U.S. beef cattle of acute/peracute BVD disease?

BVD antibody prevalence information from almost 4,000 cattle on 256 U.S. beef cow/calf operations in 1993 indicates that the risk of widespread outbreaks of peracute disease from BVD virus in the U.S. in beef cattle is relatively low.

Serum samples from beef cattle were tested for antibodies to BVD virus as part of the 1993 Beef Cow/Calf Health and Productivity Audit (CHAPA), a national study of the beef cow/calf industry by the USDA's National Animal Health Monitoring System (NAHMS). While 46 percent of the beef herds in the CHAPA subsample reportedly were unvaccinated for BVD virus, 91 percent of these cattle operations had at least one animal with a serum neutralization BVD antibody titer of at least 1:8 (considered seropositive), and 69 percent of the individual cattle tested were seropositive. These findings indicate widespread BVD virus transmission in many BVD-unvaccinated beef herds. Since clinical evidence suggests that cattle herds most at risk of peracute BVD disease are those that are "naive" to BVD virus (without BVD antibodies), these results suggest that, despite lack of universal BVD vaccination in the U.S., many cattle herds may be "protected" from severe acute/peracute BVD disease by existing antibodies to circulating field BVD virus.

This discussion is not meant to imply that BVD vaccination should not be recommended. There are many other forms of BVD, such as BVD-associated abortion and classical mucosal disease, and the protection provided by field strains of the BVD virus for these other manifestations is unknown. Vaccination should be a part of an overall strategy which also includes good biosecurity measures and identification of persistently infected animals.

Generalization of these results to dairy cattle, while conceivable, should be done only with caution, since the BVD antibody levels in dairy cattle on a national basis are unknown.

4. Did publicity surrounding the spring 1994 acute/peracute BVD outbreaks affect changes in BVD vaccination practices?

Vaccine information collected by USDA:APHIS: Biotechnology, Biologics, and Environmental Protection (BBEP) indicates that the number of doses of BVD vaccine released for marketing increased in 1994, relative to 1992 and 1993. The number of doses of BVD vaccine (monovalent and combination products) released for marketing in 1992, 1993, and 1994 were 116.3 million, 119.8 million, and 134.4 million, respectively. The 1994 figure represented a 12 percent increase in doses released for marketing, compared to a 3 percent increase in doses in 1993. While doses released for marketing do not necessarily indicate doses used, vaccine handling practices, or route of administration, they are an indication of an increase in demand for BVD virus vaccines in the U.S. that could have been at least partly driven by the publicity generated after the 1994 acute/peracute BVD herd outbreaks in the U.S.

Contact: NAHMS, USDA:APHIS:VS Centers for Epidemiology and Animal Health, Fort Collins, CO, (970) 490-8000.

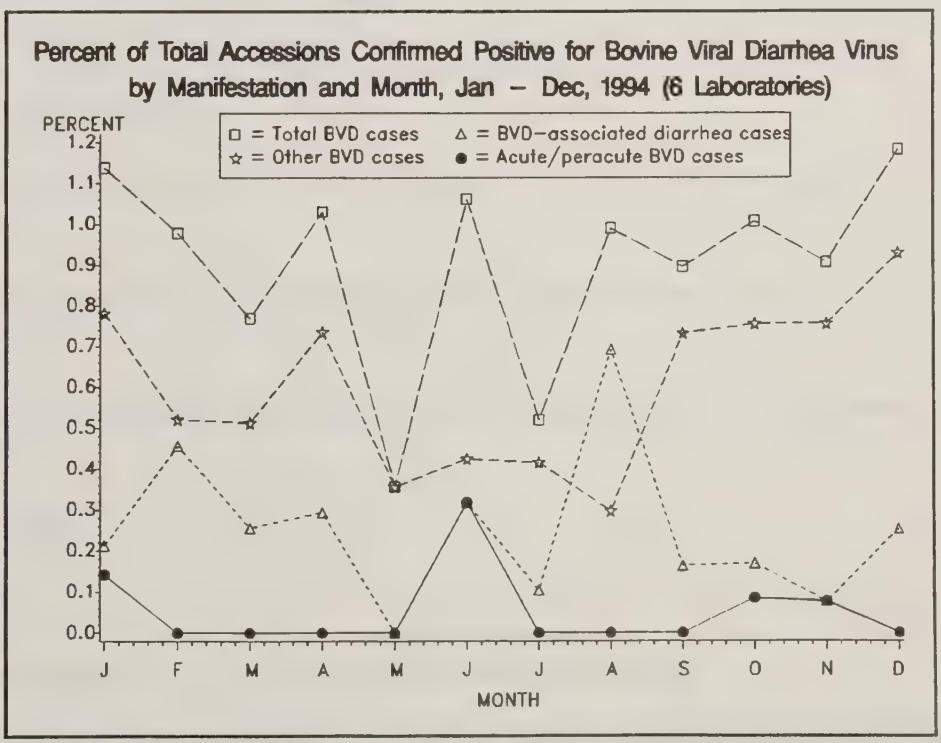


Figure 6

I. Patterns of Selected Diseases

Section I contains information on diseases of interest as designated by List B of the Office International des Epizooties (OIE). The purpose of reporting these data is to monitor confirmed cases of specific diseases on a State-by-State or regional basis so that national distributions can be mapped and evaluated.

Key to Figures in this Section:

- **Deviation bar charts show the base 2 logarithmic transformation of the ratio of positive tests for the current quarter to the mean positive tests for the previous four quarters. A value of '0' is equivalent to a ratio of '1,' indicating no change compared to historical values. Each incremental unit change indicates a doubling (positive change) or halving (negative change) of the present value compared to the mean of the historical values.**
- **Maps present data in two manners. Maps of federally regulated conditions show numbers of herds. Maps of conditions reported by participating laboratories show total number of positive tests over total number of tests run, per State, for the current and previous quarter.**
- **In some cases, the denominator is a minimum because some laboratories were not able to determine the total number of negative tests performed.**
- **Data are presented by region or State of specimen origin and quarter of the calendar year for specimen submission.**
- **Results reported with dates not corresponding to the current quarter are the result of different testing intervals or related to different reporting times.**
- **See map on inside front cover for regions.**
- **Test abbreviations used in this section:**
  AGID = Agar gel immunodiffusion
  CF = Complement fixation
  ELISA= Enzyme linked immunosorbent assay
  IFA = Indirect fluorescent antibody

☐ Bovine Leukosis Virus (BLV)

Criteria: AGID or pathology.

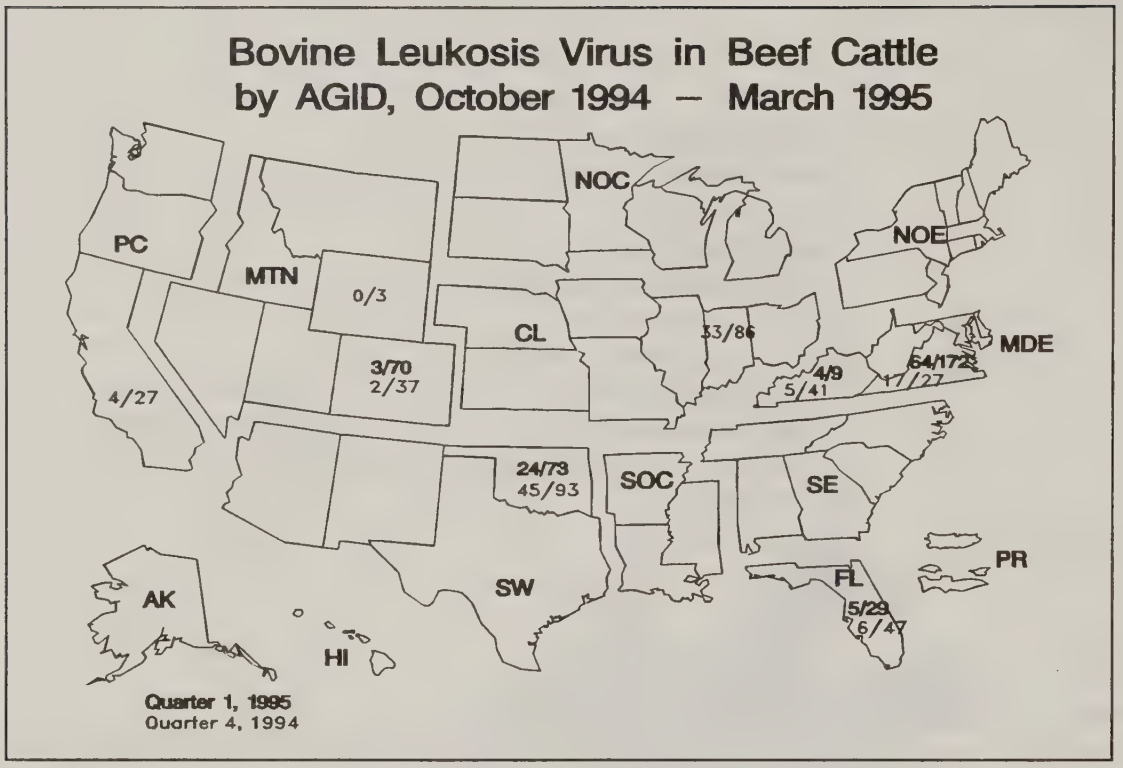


Figure 7

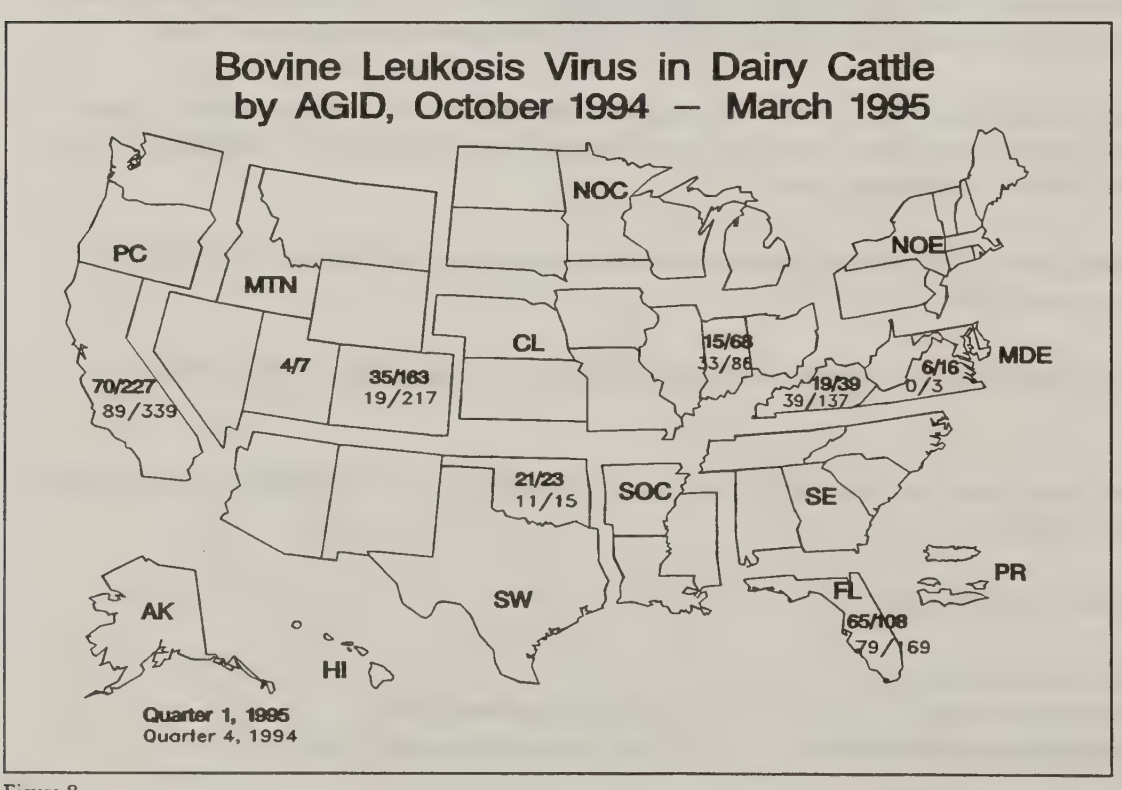


Figure 8

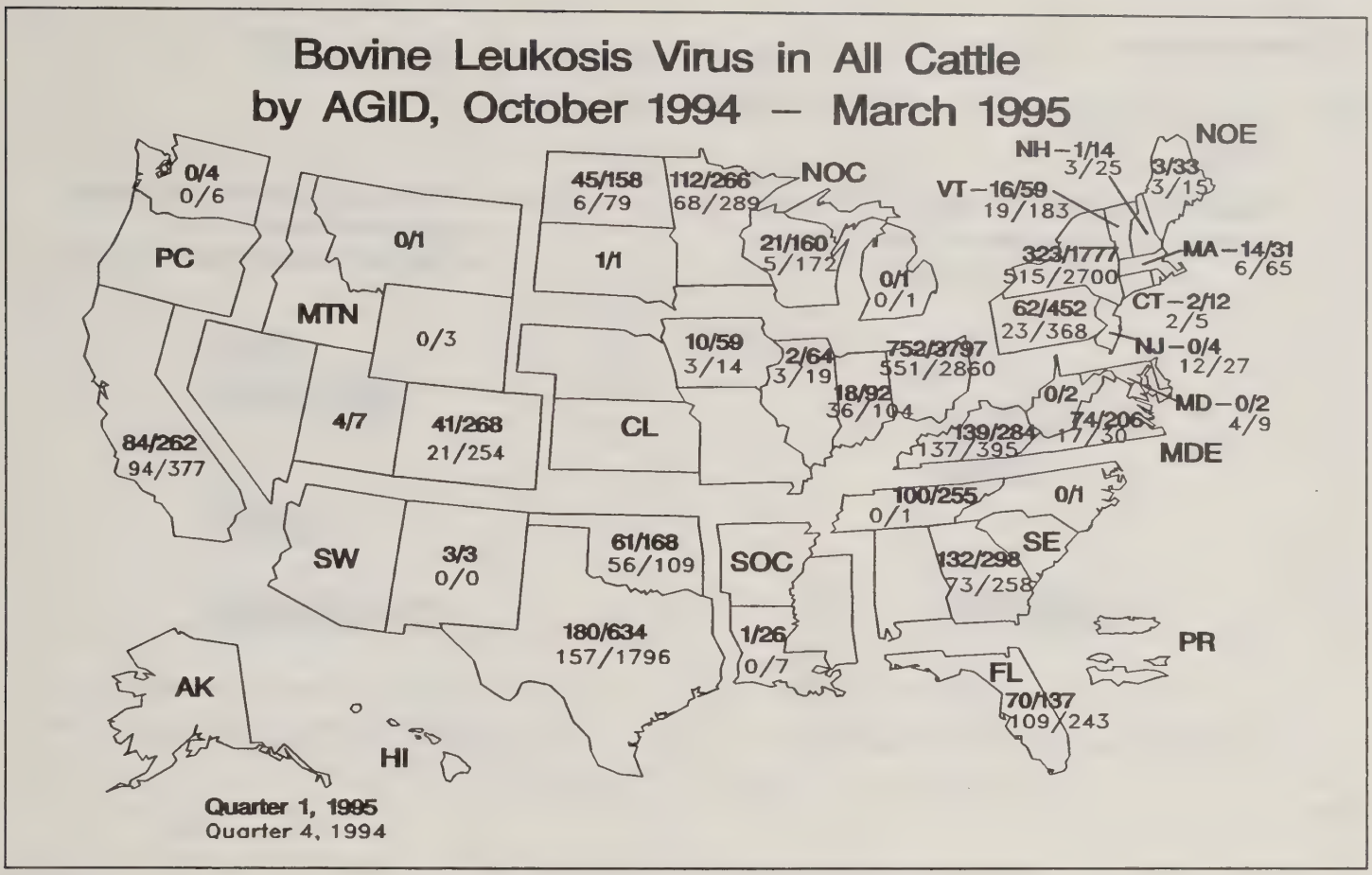


Figure 9

For the first quarter of 1995 (January through March), there were 2,271/9,538 (23.8 percent) positive AGID tests for bovine leukosis virus (BLV), compared to 1,923/10,414 (18.5 percent) for the fourth quarter of 1994 and 2,169/9,471 (22.9 percent) for the first quarter of 1994. Figures 7 through 9 show the distribution of AGID test results for BLV for the first quarter of 1995 and the fourth quarter of 1994 in beef, dairy, and all cattle by State. Figure 9 includes results where the class was unknown.

Figure 10 shows the ratio of total AGID positives for the first quarter of 1995 compared to the average total AGID positives for the previous year by region.

In addition to the AGID results reported above, four States reported results for histopathology or multiple tests. Minnesota reported two positives of 19 tested, Missouri reported four positives of 27 tested, North Dakota reported one positive of 40 tested, and Virginia reported one positive of one tested.

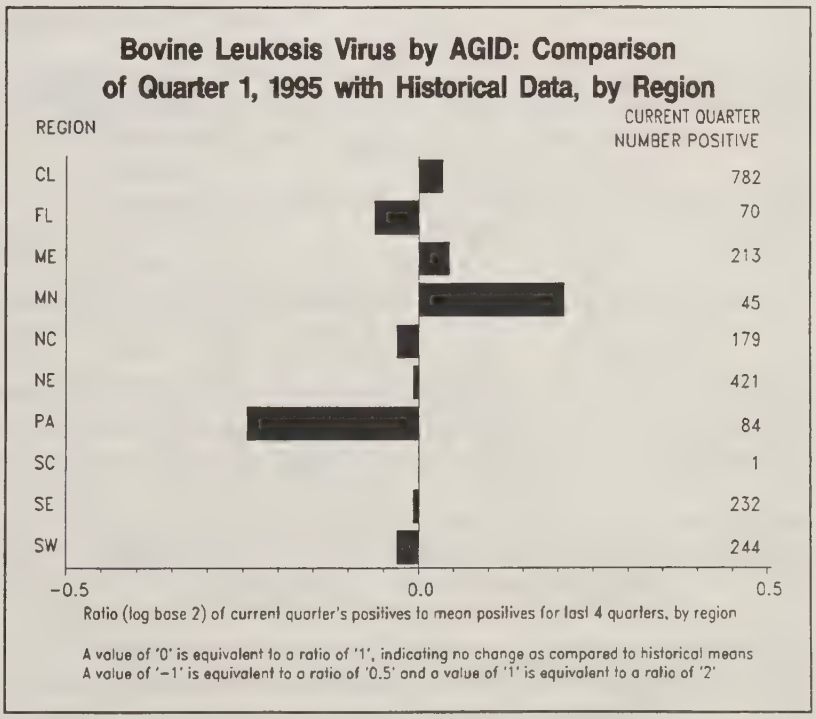


Figure 10

Note: States with no values are nonreporting States.

☐ Paratuberculosis

Criteria: Culture, histopathology, DNA probe, AGID, ELISA, or CF.

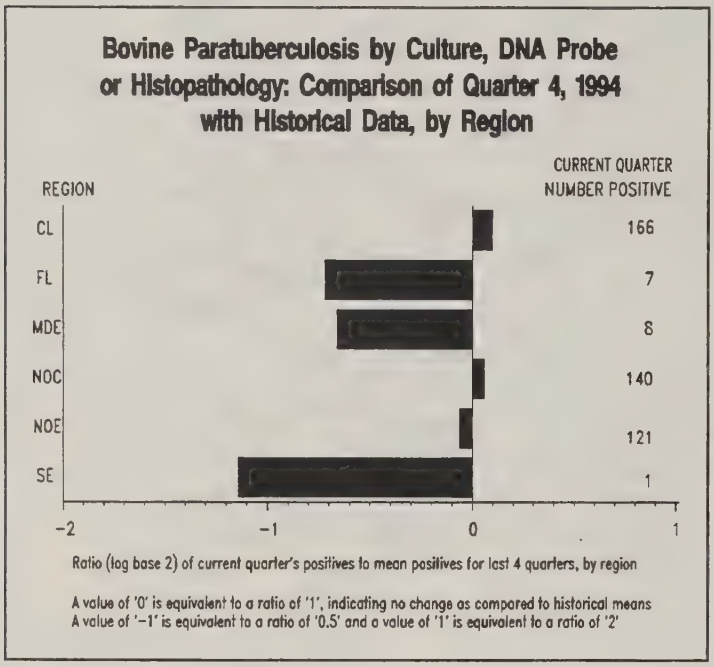


Figure 11

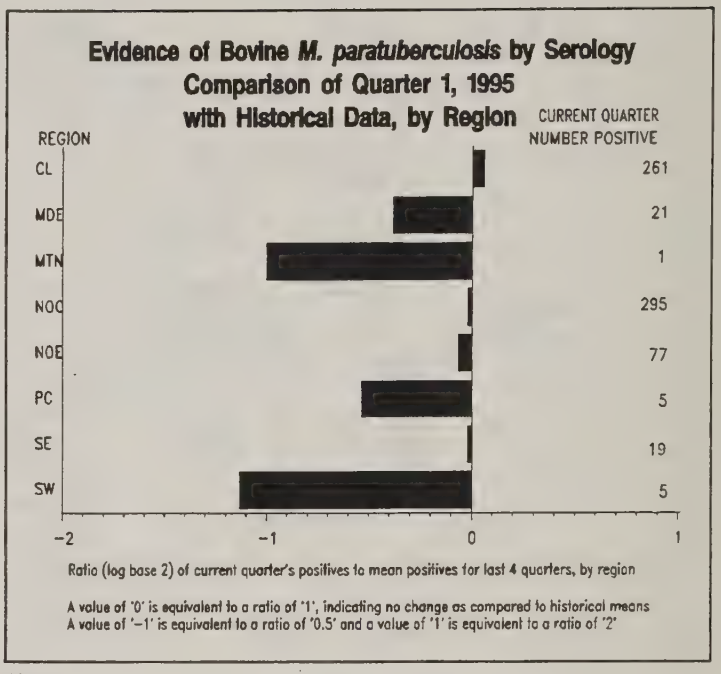


Figure 12

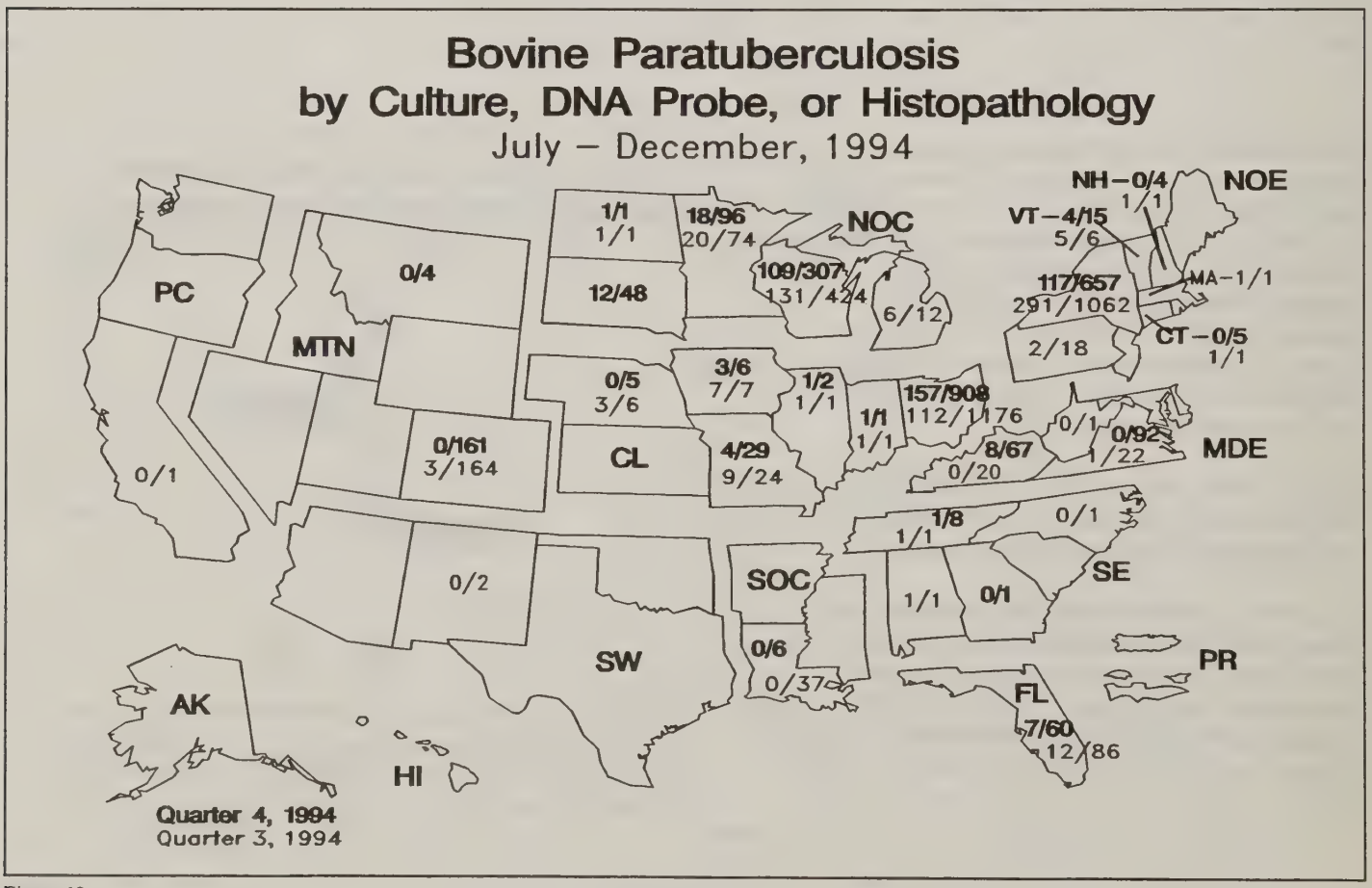


Figure 13

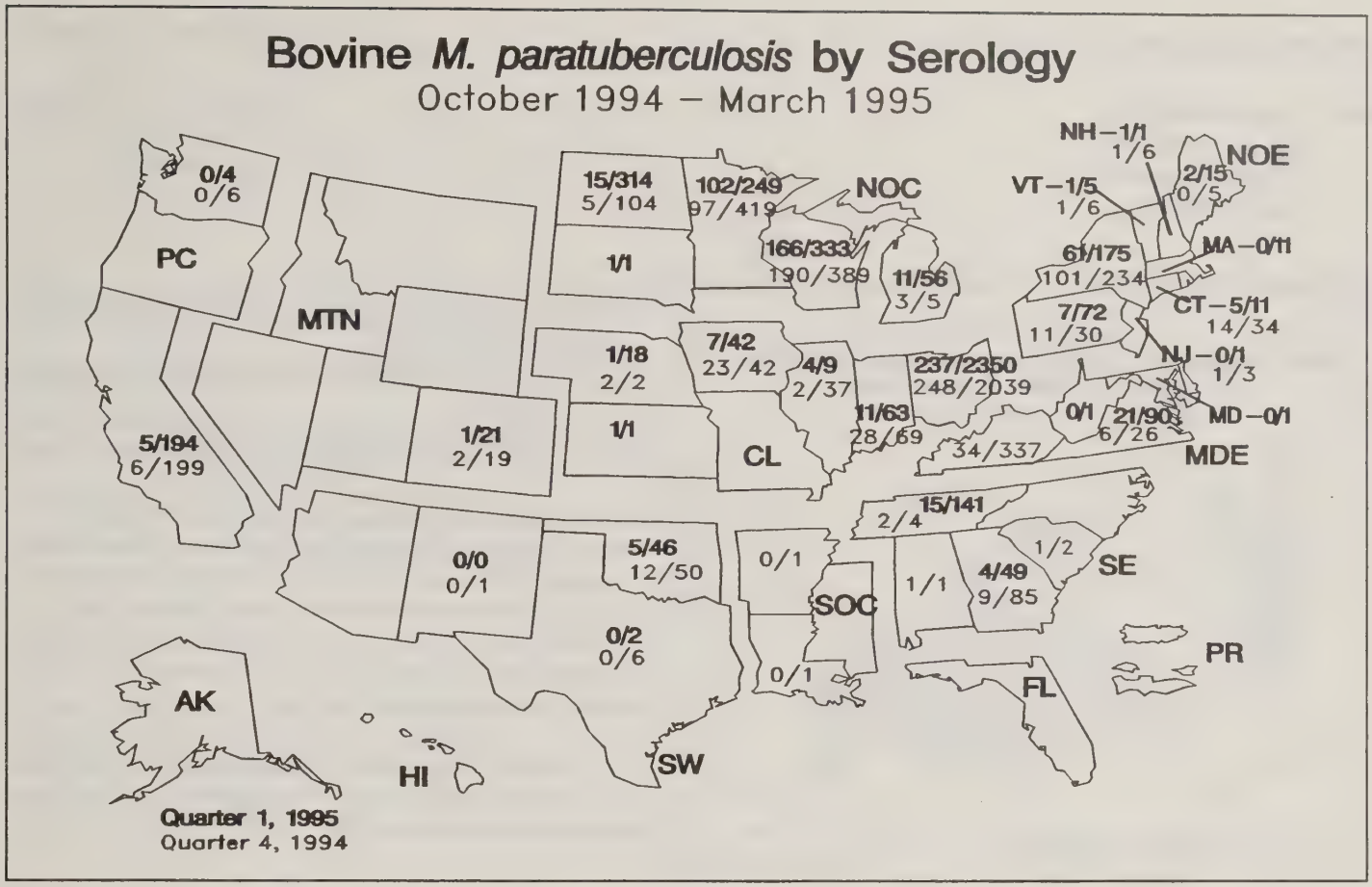


Figure 14

Bovine: Figure 11 shows the ratios of the positives for the fourth quarter of 1994 to the average number of positives for the previous four quarters. Data represent paratuberculosis culture, DNA probe, and histopathology, by region. Ratios for paratuberculosis serology positives for the first quarter of 1995 compared to the previous four quarters are shown in Figure 12.

Figure 13 shows culture, DNA probe, and histopathology results for bovine paratuberculosis for the third and fourth quarters of 1994 by State. Positives for the fourth quarter of 1994 were 443/2,484 (17.8 percent).

Figure 14 shows the serology results for bovine paratuberculosis for the first quarter of 1995 and the fourth quarter of 1994 by State. Positives for the first quarter of 1995 were 684/4,276 (16.0 percent).

Caprine: For the fourth quarter of 1994, zero out of 58 caprine paratuberculosis culture, DNA probe, and histopathology tests were positive. For the first quarter of 1995, 34/553 (6.2 percent) caprine serology tests were positive. Arizona (1), Illinois (3), Indiana (1), Maryland (2), Michigan (1), Minnesota (2), New Hampshire (1), Pennsylvania (2), Texas (15), and Wisconsin (6) had positive test results.

Ovine: For the fourth quarter of 1994, one out of 12 (8.3 percent) ovine paratuberculosis culture, DNA probe, and histopathology tests were positive. Virginia reported the positive result. For the first quarter of 1995, 14 out of 149 ovine serology tests were positive (9.4 percent). California (1), Illinois (1), Maryland (1), Michigan (1), New York (9), and Virginia (1) had positive test results.

Other: Culture results for nontraditional species reported for the fourth quarter of 1994 were negative for one bison and positive for three of seven cervidae (New York (2) and Wisconsin (1) reported the positive results.) Serology results for the first quarter of 1995 were negative for one cervid and one alpaca and positive for four of 120 bison; South Dakota reported the positive results.

Note: States with no values are nonreporting States.

☐ Bovine Brucellosis

Source: Dr. Mike Gilsdorf
USDA:APHIS:VS
Cattle Diseases Staff
(301) 734-4918

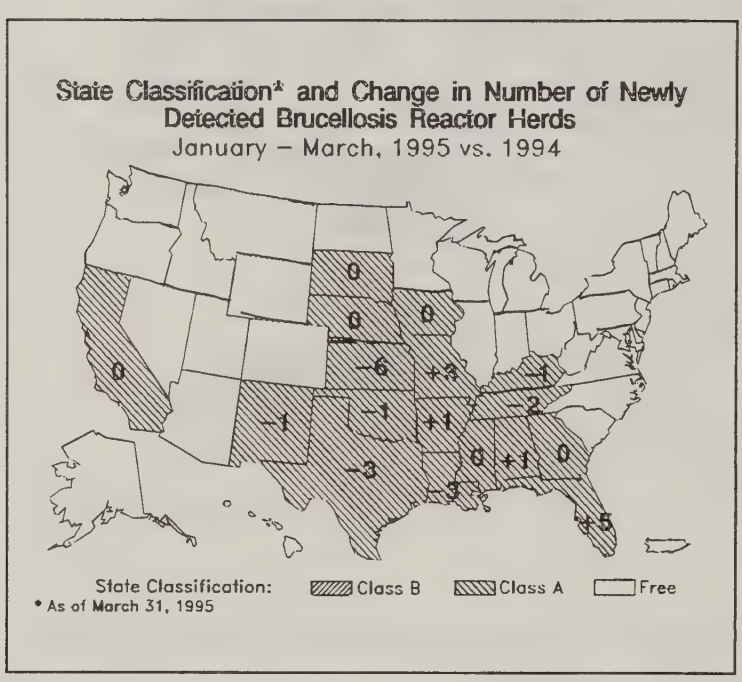


Figure 15

Reactor-herd=Herd with at least one case of brucellosis confirmed by serology or culture.

Definition of State Classification:

Class B: More than 0.25 percent, but less than 1.5 percent of all herds infected.

Class A: No more than 0.25 percent of all herds infected.

Free: No infected herds under quarantine during the past 12 months.

There are no Class B States at the time of publication for bovine brucellosis. In January 1995, Colorado changed status to bovine brucellosis free. Alabama, Arkansas, Florida, and Missouri had increased numbers of newly detected herds between January 1 and March 31, 1995. Kansas, Kentucky, Louisiana, New Mexico, Oklahoma, Tennessee, and Texas had decreased numbers (Figure 15).

For the entire U.S., there were 56 newly detected reactor herds from January through March 1995 (Figure 16), 13 fewer herds than were newly identified from October through December 1994.

The 56 brucellosis reactor herds detected in the first quarter of 1995 were seven fewer than were detected during the same quarter of 1994 (Figure 17).

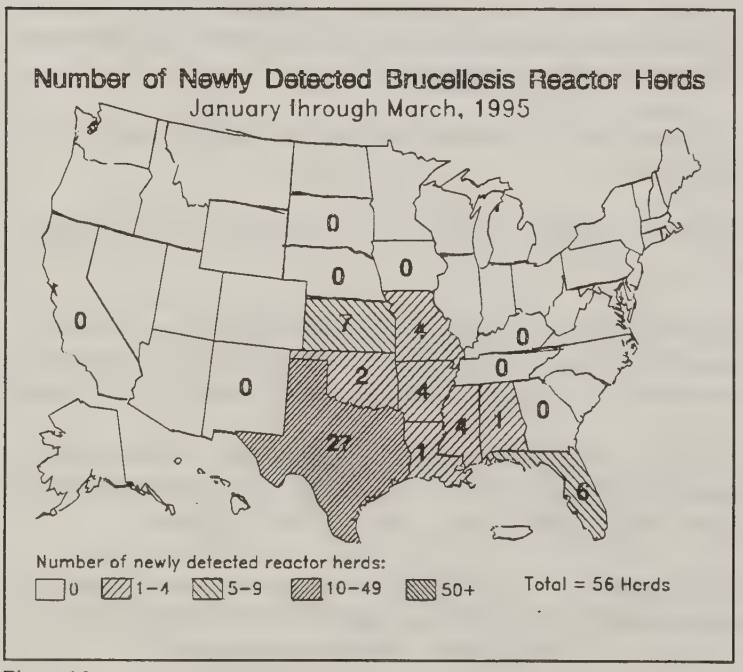


Figure 16

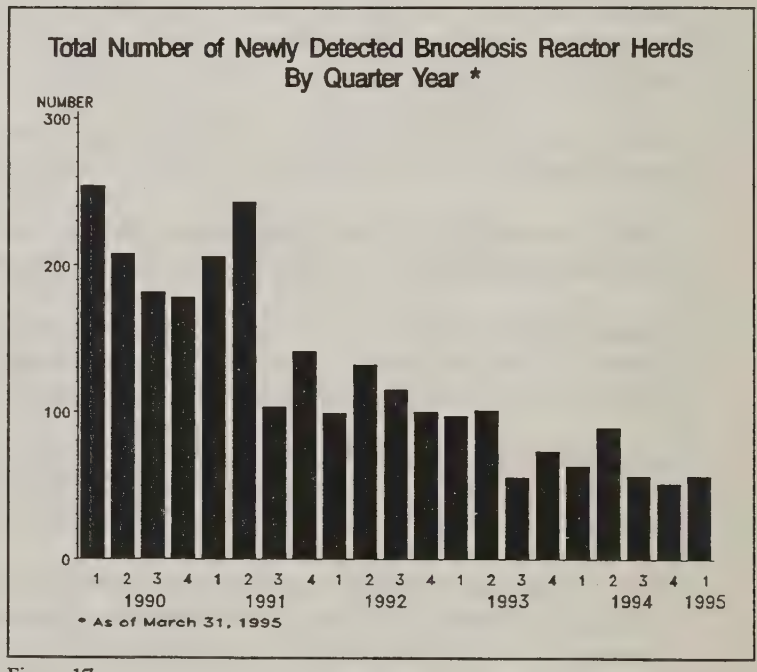


Figure 17

☐ Bovine Tuberculosis

Source: Dr. J.S. VanTiem
USDA:APHIS:VS
Cattle Diseases Staff
(301)734-8715

Infected = Laboratory confirmed existence of *Mycobacterium bovis*.
Exposed = Animals directly associated with infected animals.

State Classifications:
Modified Accredited: Testing and Slaughter Surveillance programs in effect.
Accredited Free: Testing and Slaughter Surveillance programs have identified no infected bovines for five or more years.

No new cattle or bison herds were identified as infected with bovine tuberculosis as of March 31, 1995. The seven herds shown in Figure 18 are the same as for the last quarter.

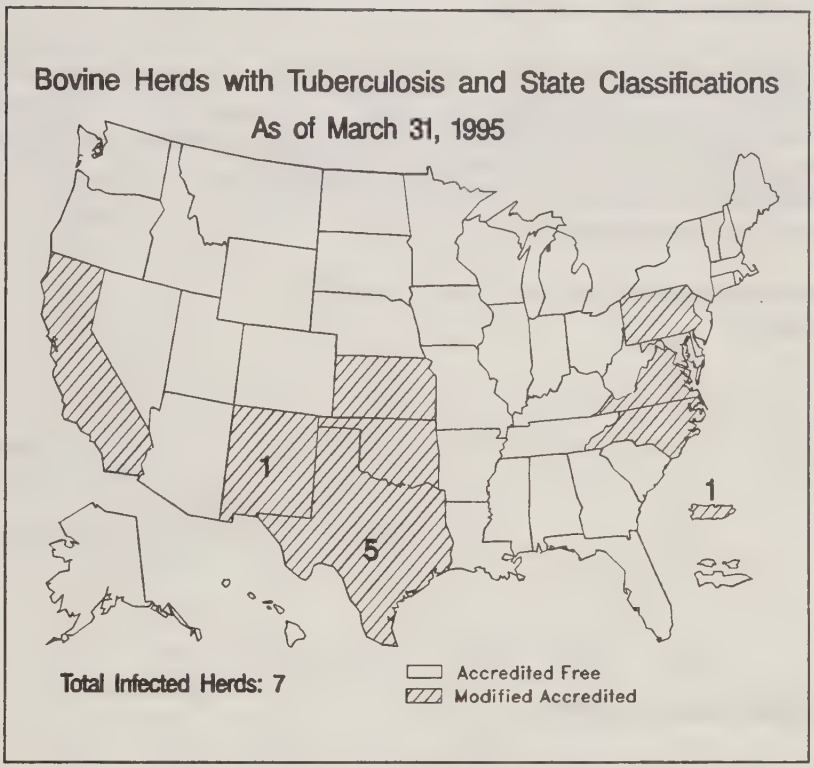


Figure 18

No new cervidae herds were identified as infected or exposed to bovine tuberculosis as of March 31, 1995. The eight herds show in Figure 19 are the same as for the last quarter.

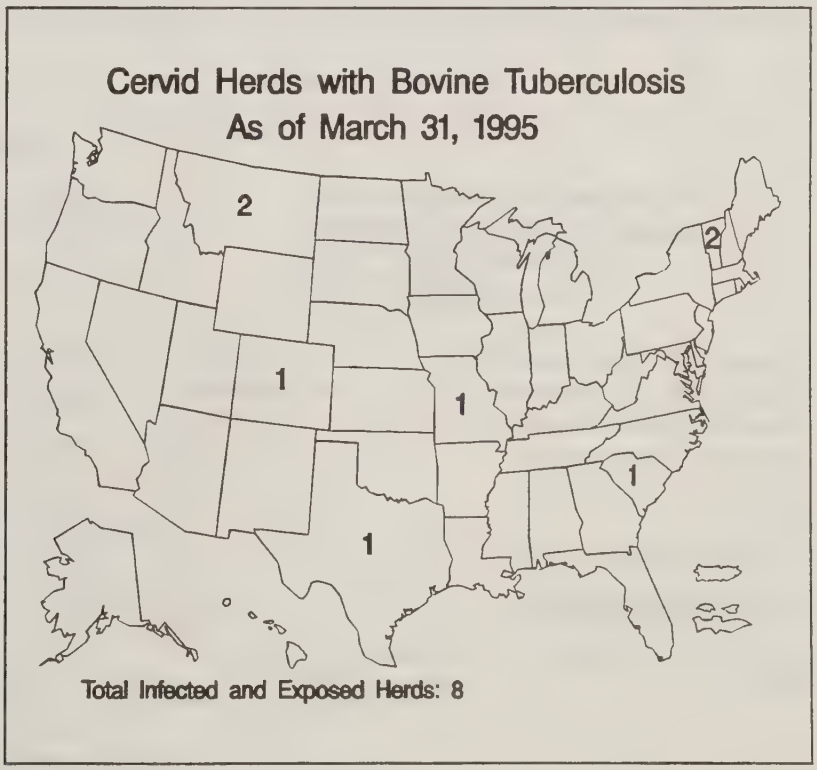


Figure 19

☐ Bovine Spongiform Encephalopathy (BSE)

United States Surveillance:

Source: Dr. A. Davis, National Veterinary Services Laboratories, Ames, IA, (515)

Surveillance for BSE in the U.S. continues with an additional 133 brains received by the National Veterinary Services Laboratories (NVSL) for examination from April 1 to June 30, 1995 (Figure 20). This brings the total number of brains which have been submitted for examination to 2,291, as of June 30, 1995.

No evidence of BSE has been found in any U.S. cattle.

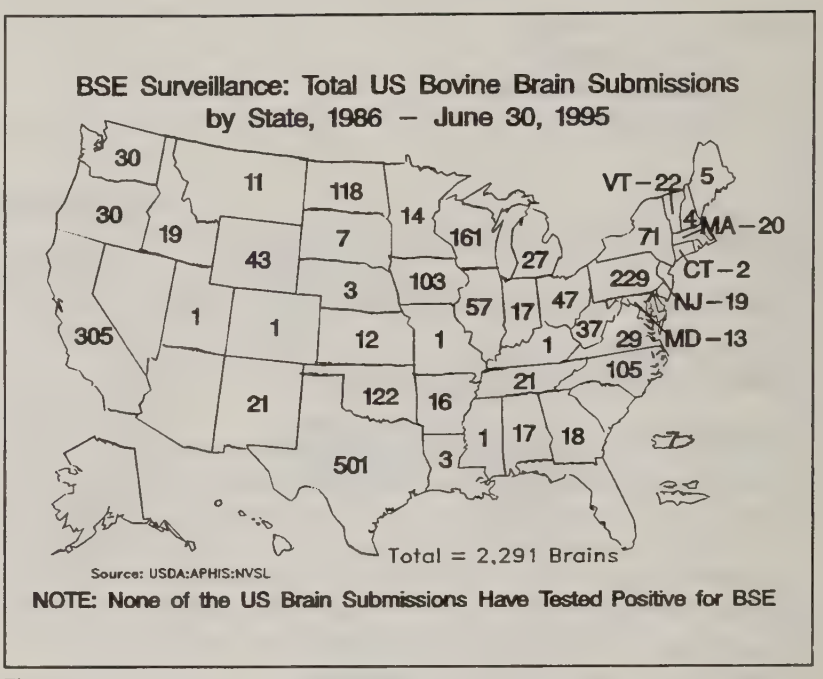


Figure 20

United Kingdom Update:

Source: Dr. J. Wilesmith, Great Britain

Great Britain reported 4,094 newly confirmed cases of BSE with 326 more herds affected between March 3 and June 26, 1995 (Table 3). Review of the epidemic curve (Figure 21) indicates that the epidemic continues to decline.

Bovine Spongiform Encephalopathy
Descriptive Epidemiological Statistics
for Great Britain*
As of June 26, 1995

Total number of confirmed cases:	148,995
Total number of affected herds:	32,448
Proportion of dairy herds affected:	53.5%
Proportion of beef suckler herds affected:	14.8%

* England, Scotland, and Wales

Data provided by Great Britain.

Table 3

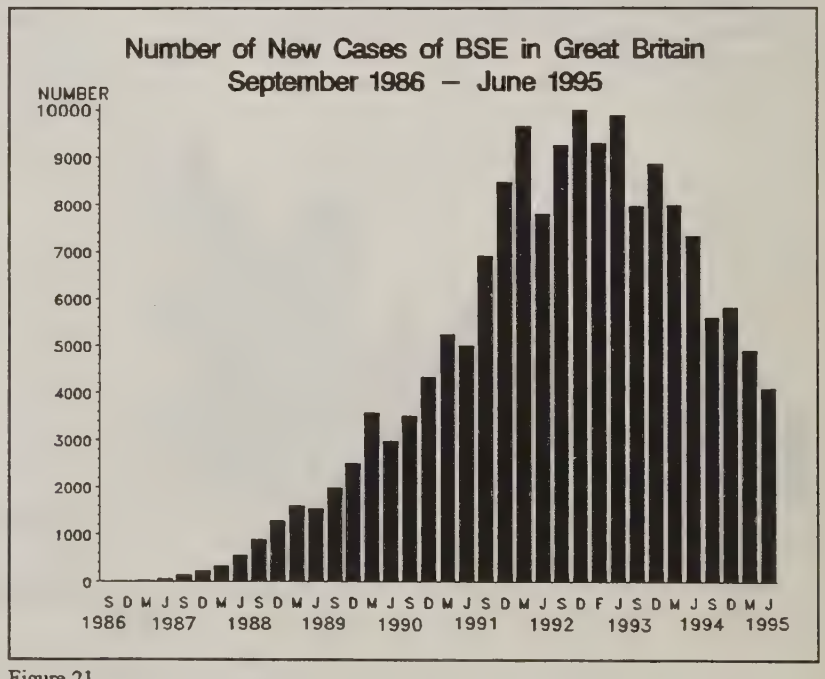


Figure 21

Other BSE Affected Countries:

Sources: Dr. T. Chillaud, Office International des Epizooties
Dr. G. O. Denny, Northern Ireland

Between April 8 and June 12, 1995, Portugal reported three additional cases of bovine spongiform encephalopathy (BSE) in native cattle, and France reported one additional native case. Switzerland reported 12 additional cases in native cattle between March 25 and May 25, 1995. Northern Ireland reported an additional 48 cases in native cattle between March 6 and July 18, 1995 (Table 4). No additional reports of cases of BSE imported from the United Kingdom or other countries with endemic BSE were recorded since the last reporting period.

BSE Cases[1] Worldwide Other Than Great Britain As of June 12, 1995

Country[2]	1987 +before	1988	1989	1990	1991	1992	1993	1994	1995	Total
Guernsey	4	34	52	83	75	92	115	69	—	524
Northern Ireland	0	3	30	100	170	333	487	363	91	1577[3]
Jersey	0	1	4	8	14	23	37	22	—	109
Isle of Man	0	6	6	22	67	109	110	55	—	375
Republic of Ireland	0	0	15	14	17	18	16	19	—	99
Switzerland	0	0	0	2	8	15	29	64	31	149[3]
Portugal	0	0	0	1[4]	1[4]	1[4]	3[4]	12	4	22
France	0	0	0	0	5	0	1	4	2	12

Countries with imported cases only:

Germany: 4 cases (02/92, 02/94, 04/94, 05/94)
Canada: 1 case (11/93)
Denmark: 1 case (07/92)
Falkland Islands: 1 case (1989)
Italy: 2 cases (10/94)
Oman: 2 cases (1989)

1. Cases in native cattle and cattle imported from the U.K. or another country with endemic BSE.
2. In order of first reported case/diagnosis.
3. Data for Northern Ireland as of July 18, 1995; data for Switzerland as of May 25, 1995.
4. Imported cases.

Data provided by Office International des Epizooties and Northern Ireland.

Table 4

☐ Bovine Bluetongue (BT) Virus

Source: Dr. A. D. Alstad, Diagnostic Virology Laboratory, National Veterinary Services Laboratories, Ames, Iowa, (515) 239-8266.

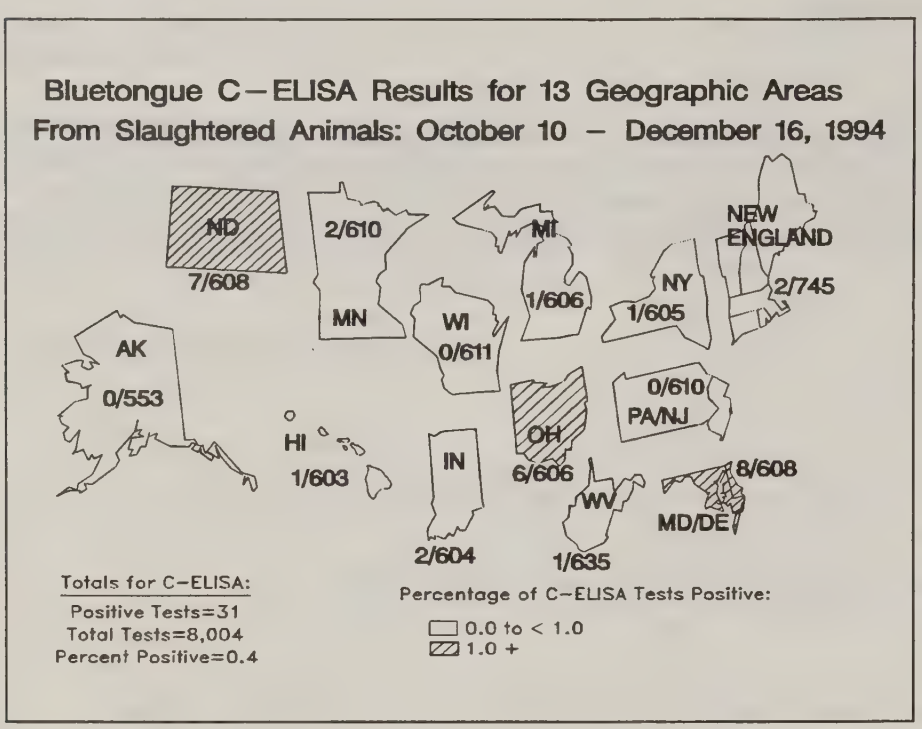


Figure 22

The 1994/95 bluetongue (BT) survey of 18 northeastern and north central States plus Alaska and Hawaii was conducted from October 10 through December 16, 1994. These States were selected because of their low incidence of antibody against BT virus as demonstrated in previous surveys. The States were combined into 13 geographic areas. The survey utilized the competitive enzyme-linked immunosorbent assay (C-ELISA) test. C-ELISA positive samples were further tested by the neutralization test (NT) against the BT and epizootic hemorrhagic disease (EHD) viruses found in the U.S.

A total of 8,004 cattle slaughter samples were tested, of which 31 (0.4 percent) were C-ELISA positive (Figure 22). Three of the 13 geographic areas sampled had 1.0 percent or greater C-ELISA positive samples. Ohio had 1.0 percent, North Dakota had 1.2 percent, and Maryland/Delaware had 1.3 percent positive. Alaska, Pennsylvania/New Jersey, and Wisconsin had no positive samples.

Bluetongue NT Results on the 31 C-ELISA Positive Samples

State	C-ELISA Positive	Neutralization Test BT	EHD	BT&EHD	Negative
Alaska	0	0	0	0	0
Connecticut	1	0	0	0	1
Delaware	2	0	0	1	1
Hawaii	1	0	0	0	1
Indiana	2	1	0	0	1
Maine	0	0	0	0	0
Maryland	6	1	0	0	1
Michigan	1	0	0	0	1
Minnesota	2	1	0	0	1
New Hampshire	0	0	0	0	0
New Jersey	0	0	0	0	0
New York	1	0	0	1	0
North Dakota	7	0	6	1	0
Ohio	6	0	2	1	2
Pennsylvania	0	0	0	0	0
Rhode Island	0	0	0	0	0
Vetmont	0	0	0	0	0
West Virginia	1	1	0	0	0
Wisconsin	0	0	0	0	0
Total	31	5	8	6	12

Table 5

Five of the 31 C-ELISA positive samples tested positive for BT only by the neutralization test (Table 5). Eight of the C-ELISA positive samples had neutralizing antibody against EHD and six had antibodies against both BT and EHD. The remaining 12 C-ELISA positive samples were negative for either BT or EHD antibodies.

Of the five samples which had BT neutralizing antibodies, all had antibodies against the BT-11 serotype, and one sample also had antibody against serotype BT-10.

☐ Equine Viral Arteritis (EVA) Virus

Criteria: Virus neutralization (1:4 titer) and no history of vaccination, or virus isolation from tissue or semen.

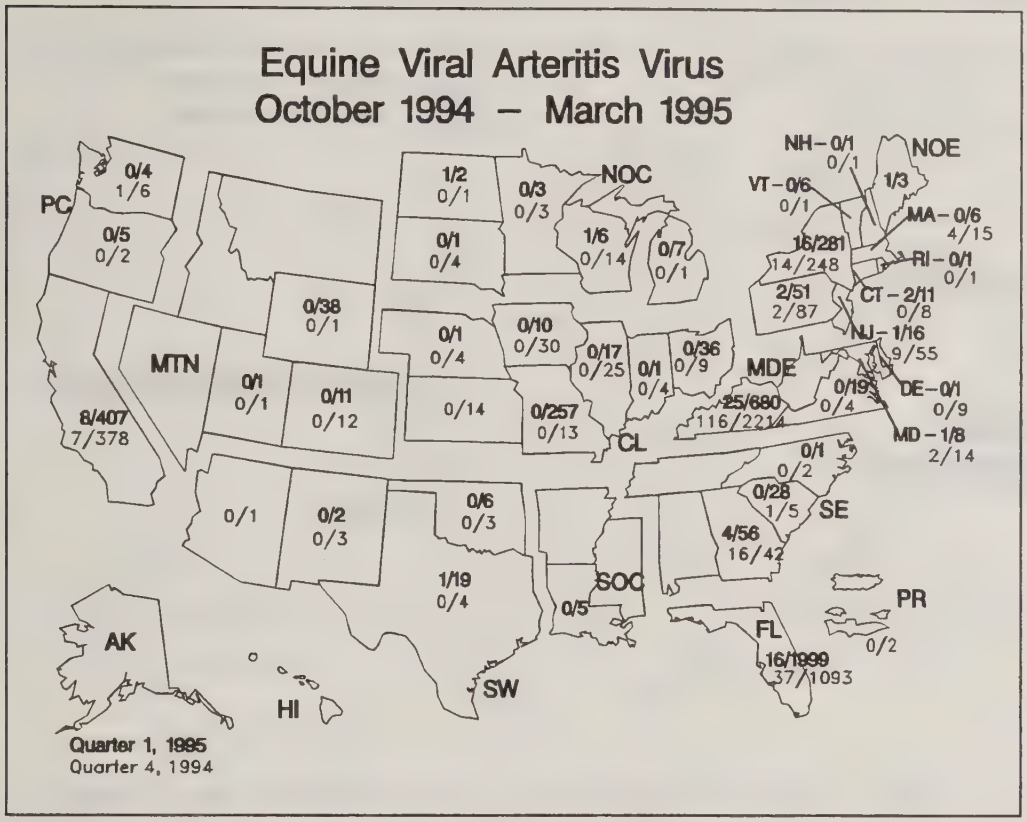


Figure 23

For all regions combined, 79 positives (2.0 percent of the 4,008 tests) for equine viral arteritis (EVA) virus were reported for the first quarter of 1995 (Figure 23).

There appears to be a seasonal trend with an increase in percent positive during the winter months (Figure 24).

Figure 25 shows the ratio of the number positive for the first quarter of 1995 compared to the previous four quarters.

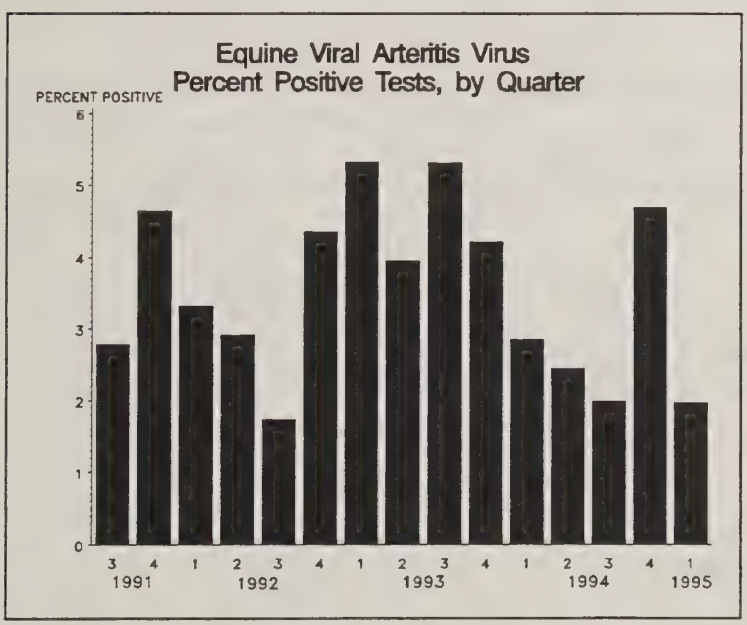


Figure 24

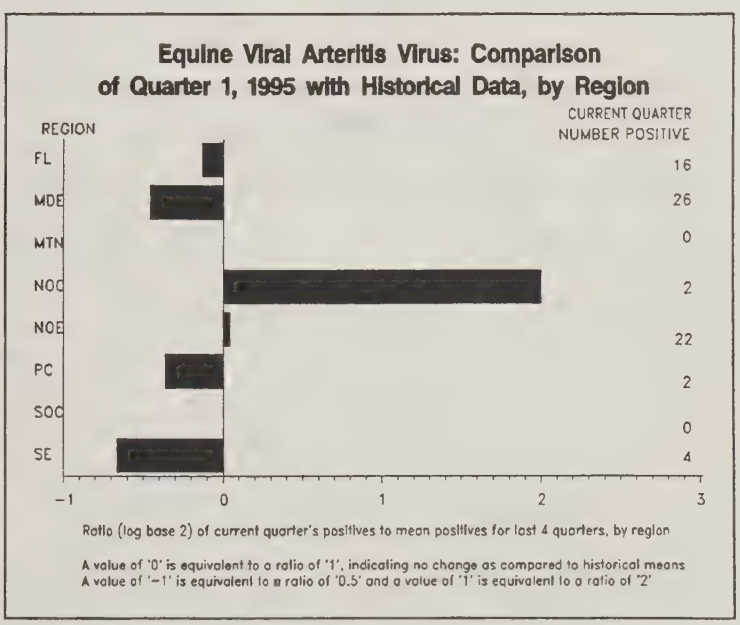


Figure 25

Note: States with no values are nonreporting States.

☐ Porcine Reproductive and Respiratory Syndrome (PRRS) Virus

Criteria: Virus isolation or antibody detection by indirect fluorescent antibody.

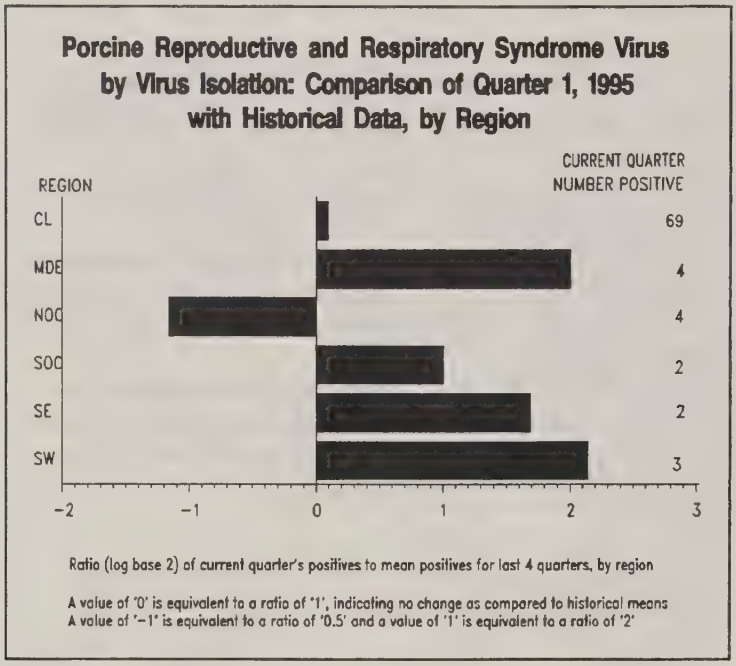


Figure 26

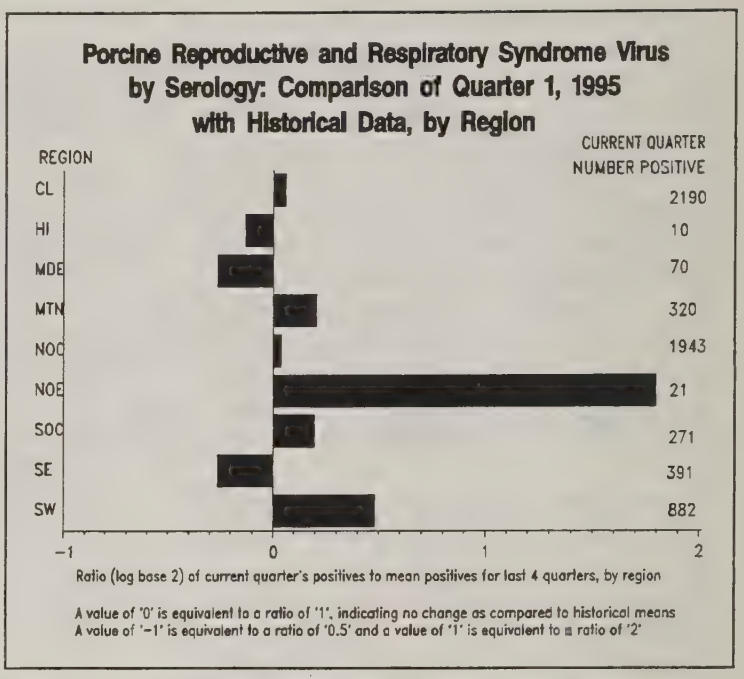


Figure 27

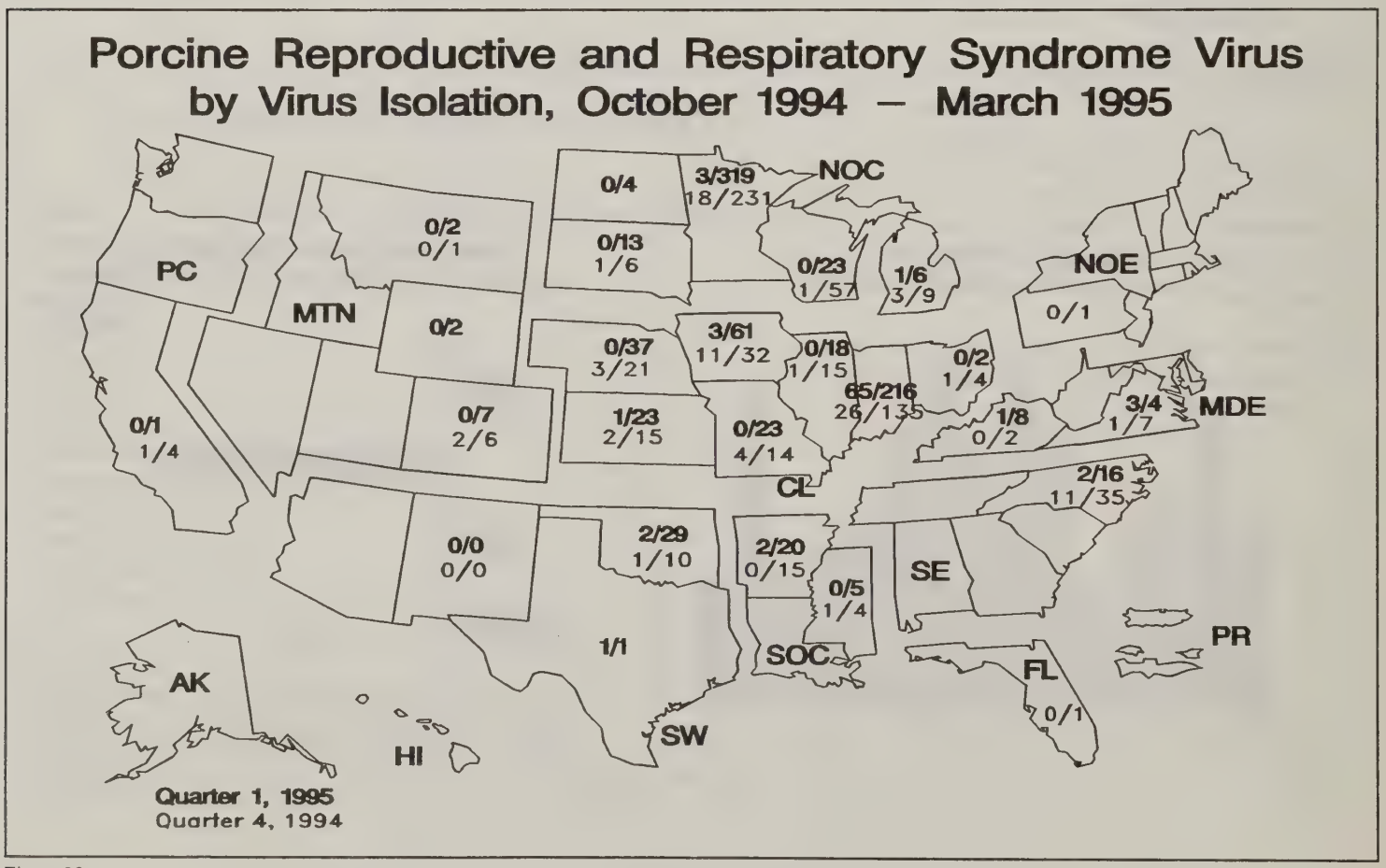


Figure 28

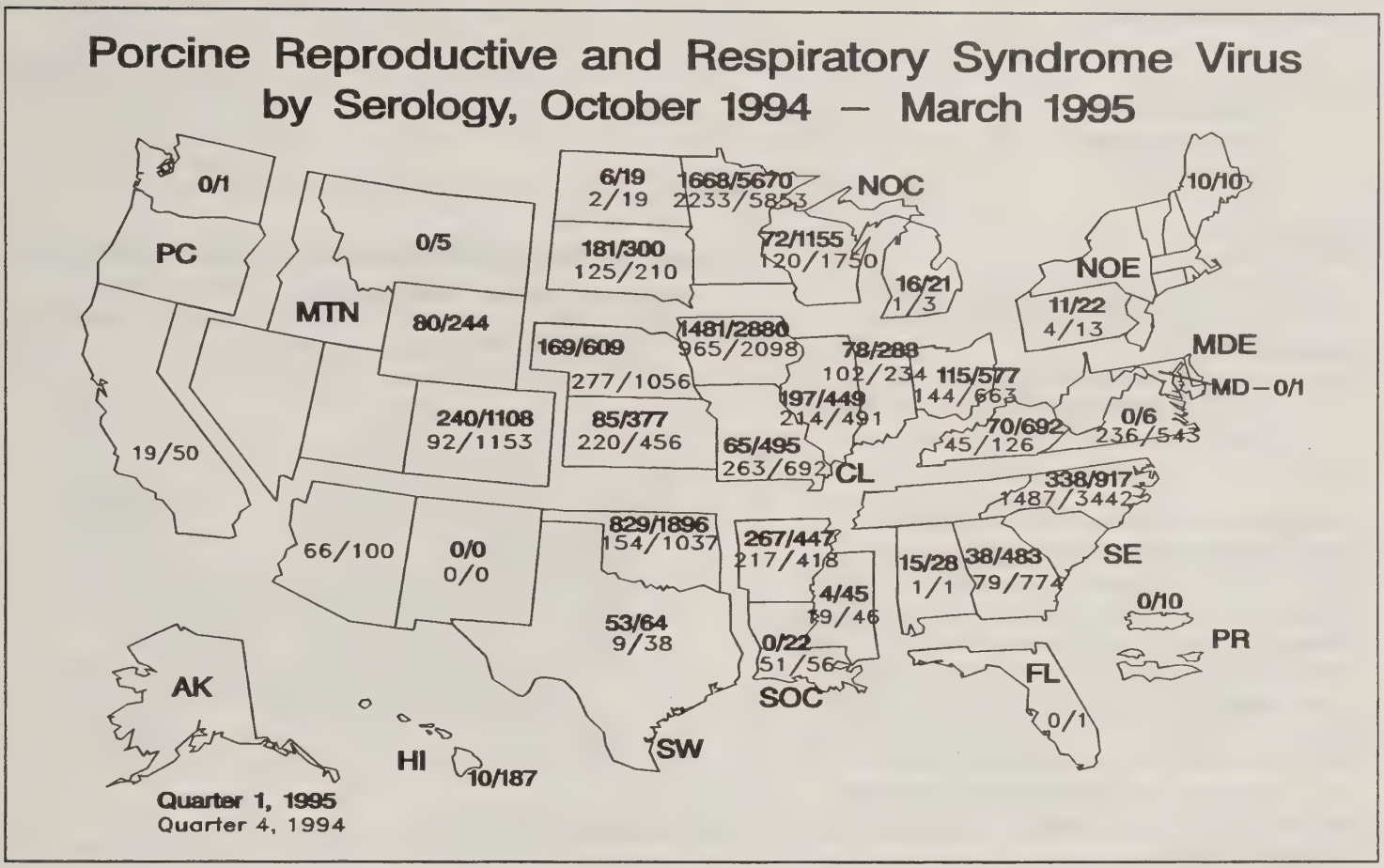


Figure 29

Virus isolation for porcine reproductive and respiratory syndrome (PRRS) virus resulted in 84 positives out of 840 tests run (10.0 percent) for the first quarter of 1995. Figure 26 shows the ratio of number positive for quarter one 1995 compared to the average number positive for the previous four quarters for isolation results.

IFA serology testing for PRRS resulted in 6,098 positives out of 19,023 tests run (32.1 percent) for the first quarter of 1995. Figure 27 shows the ratio comparison of serology results.

Figures 28 and 29 show the results of virus isolation and IFA serology, respectively, for the fourth quarter of 1994 and the first quarter of 1995, by State.

☐ Swine Brucellosis

Source: Dr. Joe Annelli
USDA:APHIS:VS
Swine Health Staff
(301) 734-7767

State Classifications:

Stage 1: Organization
(Surveillance and traceback begun.)

Stage 2: At least 10 percent Surveillance/year. At least 80 percent of tracebacks successful.

Stage 3: Validated Free
(At least 5 percent Surveillance/year. At least 80 percent of tracebacks successful.

Florida and South Carolina moved from Stage 1 to Stage 2 for swine brucellosis between October and December 1994. There were no classification changes between January and March 1995. There are no Stage 1 States at this time. Three States had newly detected swine brucellosis reactor herds (Alabama, Florida, and Texas) during the fourth quarter of 1994. Five States had newly detected herds (Alabama, Florida, Louisiana, Nevada, and New Jersey) during the first quarter of 1995 (Figure 30). The total number of newly detected herds was 14 in the fourth quarter of 1994 and 7 in the first quarter of 1995.

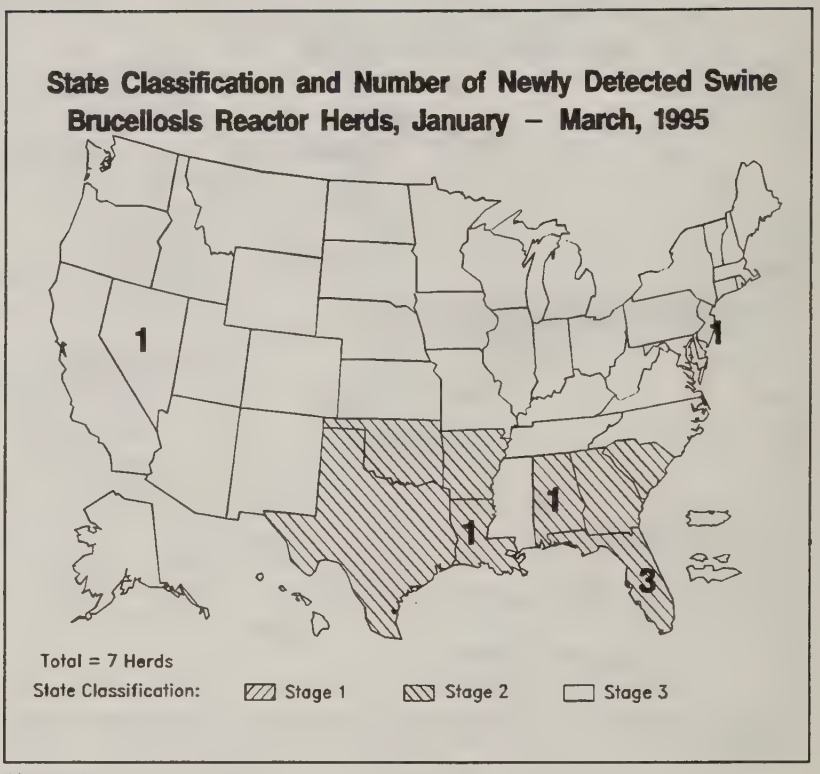


Figure 30

There were six swine herds quarantined for brucellosis in Florida in the fourth quarter of 1994. There were three herds quarantined in Florida in the first quarter of 1995 (Figure 31). The total number of quarantined herds has decreased steadily since the third quarter of 1992 (63, 63, 59, 50, 37, 34, 31, 14, 14, 8, 6, and 3 quarantined herds per quarter, respectively).

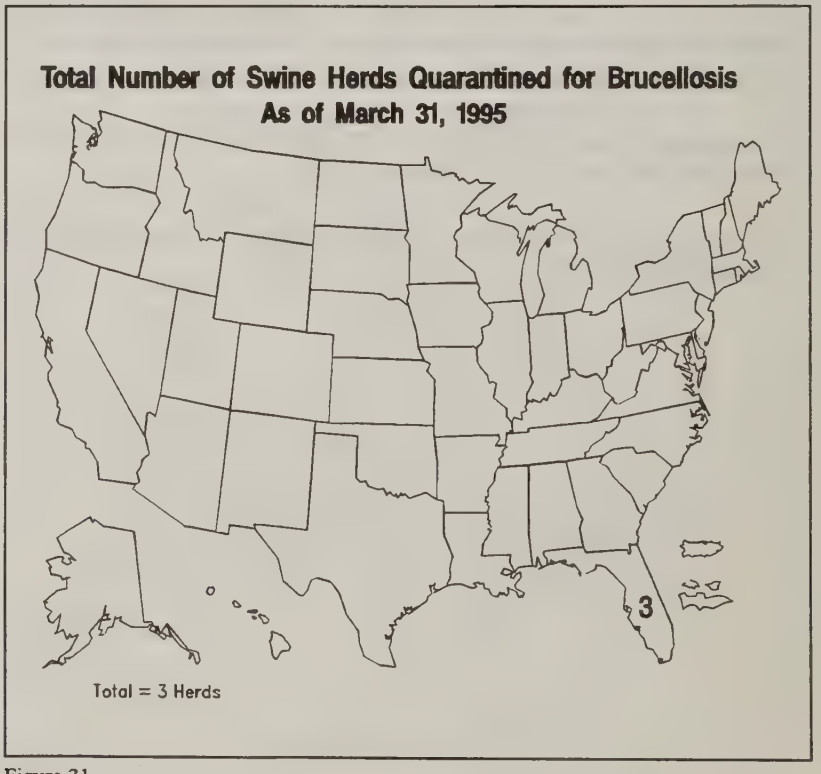


Figure 31

☐ Pseudorabies Virus (PRV)

Source: Dr. Joe Annelli
USDA:APHIS:VS
Swine Health Staff
(301) 734-7767

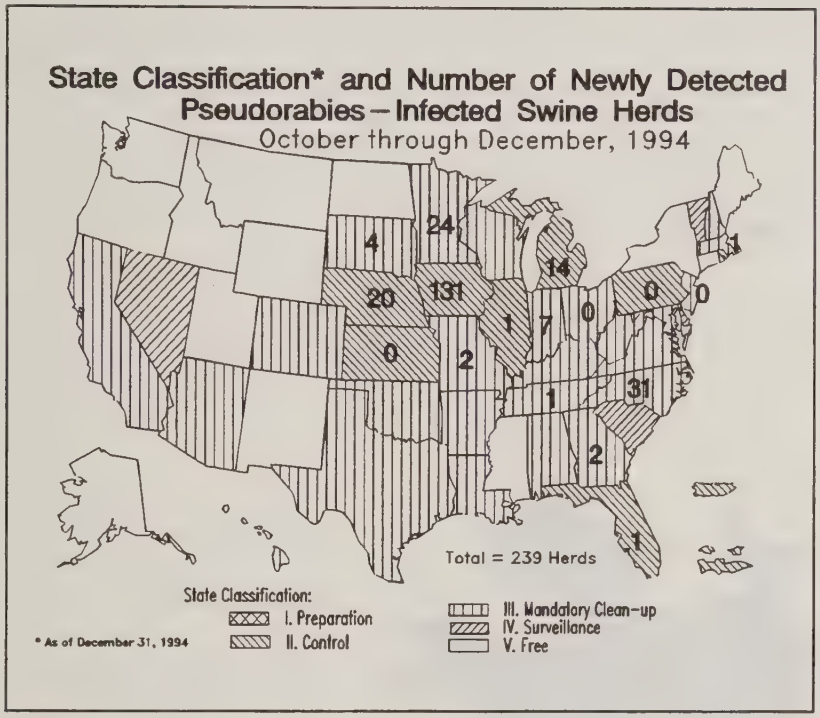


Figure 32

A total of 239 swine herds were newly identified with pseudorabies virus (PRV) during the fourth quarter of 1994 (Figure 32). The number of newly infected herds in Iowa was 131. State classification changes for the fourth quarter of 1994 included Florida (Class II), Missouri (Class III), and Vermont (Class IV). All three States advanced in classification. There were no Class I States at the time of publication.

Iowa had 59.5 percent of all known PRV infected swine herds in the United States (3,212 out of 5,399) in the fourth quarter of 1994. The total number of known infected herds in the U.S. has continued to decline (Figure 33). The herd prevalence of PRV was 2.6 percent. Since 1992, the herd prevalence has remained between 2 and 3 percent.

The percentage of known infected swine herds participating in clean-up programs has steadily increased for all States since 1990 (Figure 34). For the fourth quarter of 1994, the overall participation rate was 95.4 percent, with 5,148 of the 5,399 known infected herds on clean-up plans.

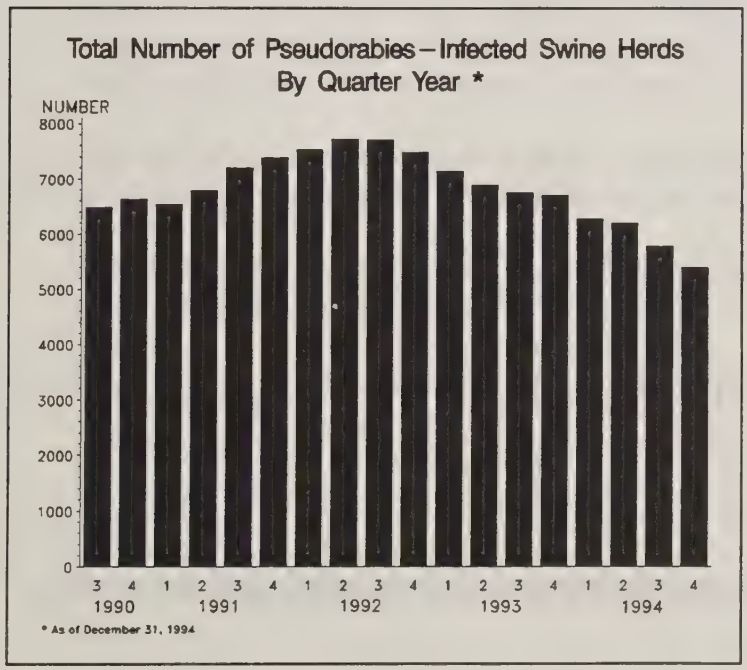


Figure 33

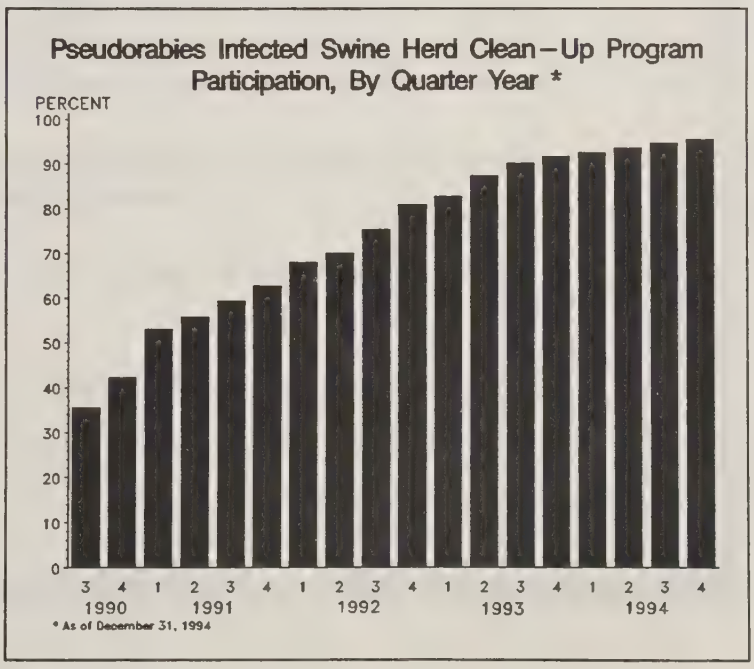


Figure 34

II. Selected Etiologic Agents Associated with Bovine Abortion

Section II characterizes selected agents associated with bovine abortions (aborted fetuses or congenitally infected calves) from accessions reported to veterinary diagnostic laboratories.

Key to Figures in this Section:

- **Deviation bar charts show the base 2 logarithmic transformation of the ratio of positive tests for the current quarter to the mean positive tests for the previous four quarters. A value of '0' is equivalent to a ratio of '1' indicating no change compared to historical values. Each incremental unit change indicates a doubling (positive change) or halving (negative change) of the present value compared to the mean of the historical values.**
- **Maps of conditions reported by participating laboratories show total number of positive accessions over total number of accessions run, per State, for the current and previous quarter.**
- **In some cases, the denominator is a minimum because some laboratories were not able to determine the total number of negative tests performed.**
- **Data are presented by region or State of specimen origin and quarter of the calendar year for specimen submission.**
- **See map on inside front cover for regions.**

☐ *Neospora* spp.

Criteria: Histopathology and detection of antigen by immunohistochemistry, or detection of antibody in aborted fetus by indirect FA.

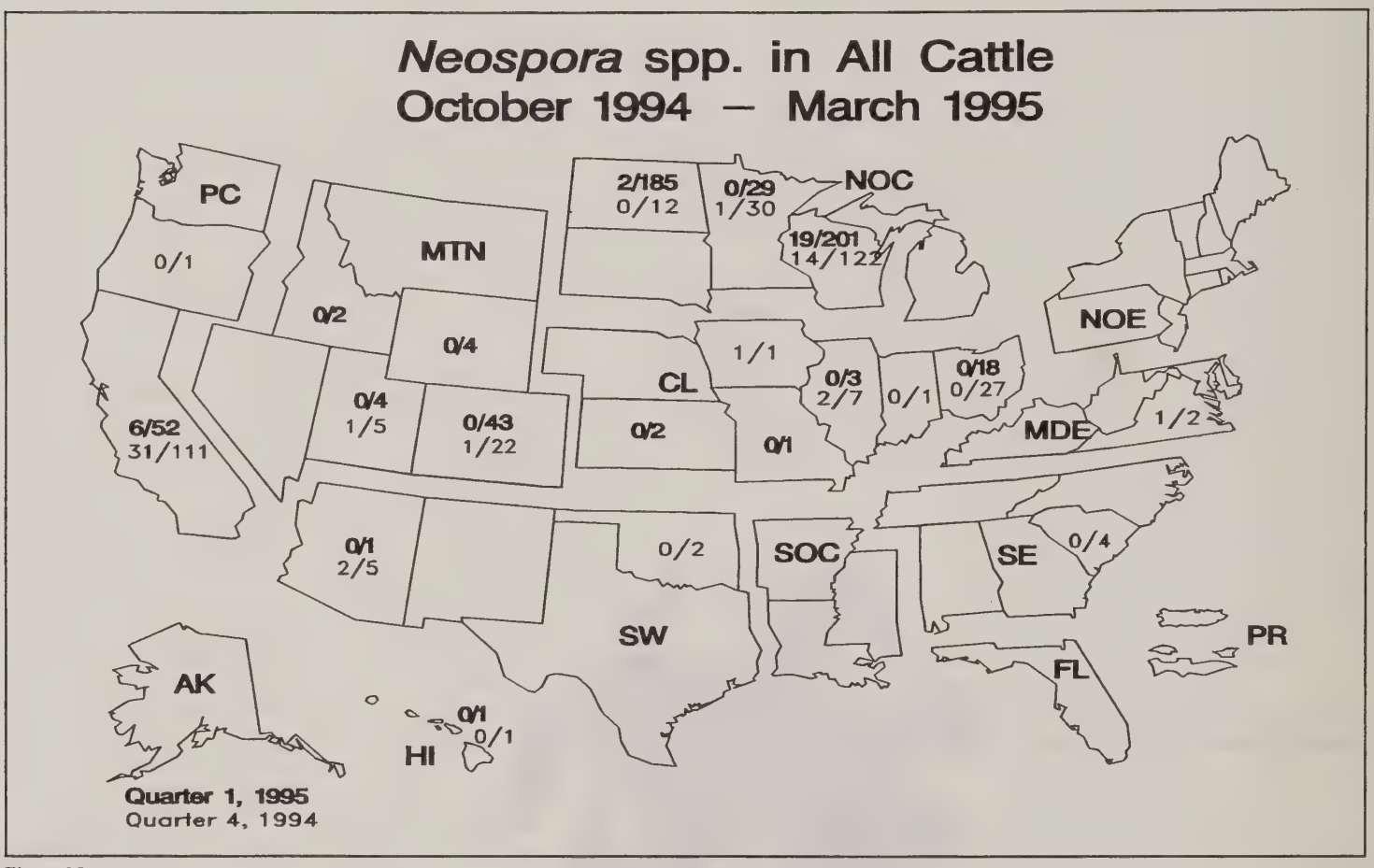


Figure 35

Figures 35 shows the distribution of test results for *Neospora* spp. for the fourth quarter of 1994 and the first quarter of 1995 by State. For all cattle, 27/546 (5.0 percent) accessions tested for *Neospora* spp. were positive during the first quarter of 1995.

Note: States with no values are nonreporting States.

Appendix

This section provides tables displaying the most recently reported diagnostic laboratory data.

Key to Tables in this Section:

- **Data are presented by laboratory of specimen origin and quarter of specimen submission. Because individuals within a State may utilize outside laboratories in addition to their own, the State numbers presented in the State maps may not agree with the numbers presented by reporting laboratory in the appendix.**
- **Values represent the number of positive tests or accessions (P) and the number of tests performed or accessions tested (T).**
- **Values reported in the "TOT" (total) category represent all tests performed during the year. This category may include some tests for which a month of specimen submission was not known. Therefore, the sum of the quarterly values may not be equal to the "TOT" values.**
- **Data totals (positives and total tests) shown for "All Calves" include specimens of unknown bovine class and those from veal calves, in addition to specimens from beef or dairy calves. Thus, the sums of dairy calf totals and beef calf totals do not always equal the totals shown for all calves.**
- **Values reported for all diagnoses/agents are for quarters in 1993 and 1994.**
- **In some cases, the reported total number of tests performed is a minimum because some laboratories were not able to determine the total number of negative tests performed.**
- **Abbreviations for laboratories used in the tables are:**

ARVDL = Arkansas
CAVDL = California
COVDL = Colorado
FLVDL = Florida
GAATH = GA, Athens
GATFT = GA, Tifton
IAVDL = Iowa
INVDL = Indiana
KYMSU = KY, Hopkinsville
KYVDL = KY, Lexington
MNDVL = Minnesota
MOVDL = Missouri
NDVDL = North Dakota
NEVDL = Nebraska
NMVDL = New Mexico
NVSL = National
NYVDL = New York
OHVDL = Ohio
OKVDL = Oklahoma
ORVDL = Oregon
PAVL = TX, Austin
PRVDL = Puerto Rico
SCVDL = South Carolina
SDVDL = South Dakota
TNVDL = Tennessee
TXVDL = TX, College Station
VAVDL = Virginia
WIVDL = Wisconsin
WYVDL = Wyoming

Appendix

Bovine Leukosis Virus

		Beef					Dairy					Total				
		|---- Quarter ---- |					|---- Quarter ---- |				|---- Quarter ---- |			
Lab		2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT
CAVDL	P	10	0	4	4	18	83	209	89	70	451	93	234	94	84	505
	T	15	20	27	4	66	319	562	339	227	1447	334	672	377	262	1645
COVDL	P		0	2	3	5		43	19	39	101		47	21	45	113
	T		6	40	70	116		145	217	170	532		191	257	274	722
FLVDL	P	14	4	6	5	29	28	15	79	65	187	42	19	85	70	216
	T	108	35	47	29	219	65	26	169	108	368	173	61	216	137	587
GAATH	P											98	14	12	79	203
	T											202	52	69	157	480
GATFT	P											89	76	63	53	281
	T											321	194	191	141	847
INVDL	P	28	32	33		93		12		15	27	28	44	33	15	120
	T	65	58	86		209		23		68	91	65	81	86	68	300
KYMSU	P											35	56	86	111	288
	T											240	119	206	225	790
KYVDL	P		9	5	4	18		164	39	19	222		182	51	27	260
	T		33	41	9	83		254	137	39	430		320	189	57	566
MNVDL	P											71	83	65	126	345
	T											271	267	284	325	1147
MOVDL	P			15	1	16			16	3	19	42	38	35	4	119
	T			34	12	46			30	12	42	71	69	78	27	245
NDVDL	P											17	28	10	58	113
	T											53	62	84	234	433
NMVDL	P											1	0	0	3	4
	T											2	2	0	3	7
NVSL	P											2	1	6	4	13
	T											27	24	8	18	77
NYVDL	P											333	616	637	456	2042
	T											3112	2779	3800	2847	12538
OHVDL	P											505	490	532	732	2259
	T											2855	2190	2716	3605	11366
OKVDL	P	15	9	45	24	93	9	72	11	21	113	39	94	56	61	250
	T	46	23	93	73	235	16	96	15	23	150	98	140	108	168	514
SDVDL	P												158			158
	T												892			892
TNVDL	P											199	115		100	414
	T											638	310		255	1203
TXVDL	P											322	270	157	180	929
	T											2924	3414	1795	633	8766
VAVDL	P	75	10	17	64	169	2	0	0	7	9	77	10	17	71	175
	T	515	53	27	172	767	3	4	3	17	27	518	57	30	189	794

Paratuberculosis by Culture, Histopathology, or DNA Probe

		Bovine					Ovine					Caprine				
		|---- Quarter ---- |					|---- Quarter ---- |				|---- Quarter ---- |				
Lab		1/94	2/94	3/94	4/94	TOT	1/94	2/94	3/94	4/94	TOT	1/94	2/94	3/94	4/94	TOT
CAVDL	P	5	1		0	6									0	0
	T	114	9		1	124									17	17
COVDL	P		1	3	0	4										
	T		167	164	161	492										
FLVDL	P	37	37	12	7	93						0	1	0	0	1
	T	85	67	86	60	298						0	7	20	14	41
INVDL	P			1	1	2										
	T			1	1	2										
KYMSU	P	32				32										
	T	72				72										
KYVDL	P			0	8	8										
	T			20	67	87										
MNVDL	P	28	15	34	35	112	0				0			1		1
	T	100	50	98	118	366	1				1			3		3
MOVDL	P	40	9	9	4	62										
	T	44	30	24	28	126										
NDVDL	P	1	2	2	2	7										
	T	1	2	2	2	7										
NVSL	P	5	6	4	1	16						0	0			0
	T	13	11	13	18	55						1	1			2
NYVDL	P	103	107	304	133	647	0		0	1	1	0	1	2	0	3
	T	1304	767	1146	825	4042	2		9	11	22	18	11	4	25	58
OHVDL	P	65	95	110	157	427	0	0			0	0	3			3
	T	1038	1180	1174	899	4291	3	4			7	29	8			37
SDVDL	P		11			11		0			0					
	T		48			48		1			1					
VAVDL	P	1	5	0		6										
	T	5	8	1		14										
WIVDL	P	60	57	131	95	343				0	0	2	0	0	0	2
	T	346	464	421	304	1535				1	1	51	11	1	2	25

M. paratuberculosis by Serology

		Bovine					Ovine					Caprine				
		|---- Quarter ---- |					|---- Quarter ---- |				|---- Quarter ---- |			
Lab		2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT
CAVDL	P	13	12	6	5	36	3	1	1	1	6	2	0	0	0	2
	T	154	63	199	194	610	50	30	8	3	91	8	25	92	12	137
GAATH	P	5	4	9	4	22										
	T	33	23	62	29	147										
GATFT	P	2	6	0	0	8										
	T	17	17	23	20	77										
INVDL	P	15	10	28	16	69							0			0
	T	61	47	62	65	235							1			1
KYMSU	P	27	29	28		84										
	T	54	151	224		429										
KYVDL	P		5	6		11										
	T		124	113		237										
MNVDL	P	92	111	147	126	476										
	T	221	309	508	325	1363										
NDVDL	P	9	21	5	15	50										
	T	59	102	104	314	578										
NMVDL	P	3	0	0	0	3										
	T	9	0	1	0	10										
NYVDL	P	78	104	130	79	391	2	7	1	10	20	4	2	2	3	11
	T	195	279	353	317	1144	4	27	14	110	155	72	31	54	46	203
OHVDL	P	180	172	248	236	836										
	T	1802	2122	2033	2346	8303										
OKVDL	P	3	6	12	4	25			2	0	2		1			1
	T	51	39	49	44	183			8	2	10		24			24
PAVL	P	71	39	8	4	122	3	3	1	3	10	42	158	56	26	282
	T	281	231	72	97	681	59	67	32	27	185	981	5655	2928	489	10053
TNVDL	P	10	12		15	37										
	T	166	205		140	511										
VAVDL	P	24	16	4	20	64										
	T	117	59	14	65	255										
WIVDL	P	256	211	169	160	796	4	0	0	0	4	1	5	6	5	17
	T	536	436	345	320	1637	7	1	1	7	16	1	11	7	6	25

Equine Viral Arteritis

Lab		Quarter 2/94	3/94	4/94	1/95	TOT
CAVDL	P	4	17	5	6	32
	T	323	261	372	384	1340
COVDL	P		4	0	0	4
	T		39	19	313	371
FLVDL	P	22	10	35	15	82
	T	1238	2268	1081	1921	6508
GAATH	P	0	2	16	2	20
	T	21	45	35	26	127
GATFT	P	0	1	0	2	3
	T	13	34	6	22	75
KYVDL	P		126	115	21	262
	T		5950	2193	676	8819
NMVDL	P	0	0	0	0	0
	T	0	4	3	0	7
NVSL	P	14	1	4	8	27
	T	124	150	177	181	632
NYVDL	P	10	28	34	25	97
	T	304	732	448	470	1954
VAVDL	P	0			0	0
	T	21			15	36

Porcine Reproductive and Respiratory Syndrome Virus Indirect Fluorescent Antibody

Lab		Quarter 2/94	3/94	4/94	1/95	TOT
CAVDL	P	3	2	6		11
	T	3	12	32		47
GAATH	P	118	153	21	38	330
	T	476	544	361	441	1822
GATFT	P		7	44		51
	T		130	331		461
INVDL	P	81	90	107	66	344
	T	134	172	208	274	788
MNVDL	P	2454	2709	6495	5186	16844
	T	10516	12653	18395	16492	58056
MOVDL	P	11	18	22	24	75
	T	53	73	108	118	352
NMVDL	P	0	0	0	0	0
	T	1	0	0	0	1
NVSL	P	732	873	295	78	1978
	T	1249	1540	1131	242	4162
OHVDL	P	96	89	143	61	389
	T	736	731	659	509	2635
OKVDL	P			12	630	642
	T			47	876	923
WIVDL	P	5	0	0	15	20
	T	105	108	51	71	335

Porcine Reproductive and Respiratory Syndrome Virus Virus Isolation

Lab		Quarter 2/94	3/94	4/94	1/95	TOT
INVDL	P	32	44	34	69	179
	T	107	153	169	234	663
MNVDL	P	20	23	54	15	112
	T	388	523	456	606	1973
NMVDL	P	0	0	0	0	0
	T	0	0	0	0	0
SDVDL	P		17			17
	T		27			27

Neospora spp.

		Beef					Dairy					Total				
		|---- Quarter ---- |					|---- Quarter ---- |				|---- Quarter ---- |			
Lab		2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT	2/94	3/94	4/94	1/95	TOT
CAVDL	P	0	0	6	1	7	12	17	31	5	65	12	22	38	6	78
	T	7	57	37	29	130	41	71	87	29	228	51	146	129	59	385
COVDL	P		0	0	0	0		0	0	0	0		0	0	0	0
	T		1	6	30	37		12	11	8	31		13	24	52	89
MNVDL	P	0	1	0		1	8	14	1		23	8	16	1		25
	T	12	4	2		18	107	110	25		242	126	139	29		294
MOVDL	P											1				1
	T											1				1
NDVDL	P											1	2	0	2	5
	T											23	19	16	214	272
OHVDL	P											1	0	0	0	1
	T											34	23	27	17	101
SDVDL	P												7			7
	T												71			71
VAVDL	P						2				2	2				2
	T						3				3	3				3
WIVDL	P											4	24	15	19	62
	T											55	103	128	204	490

Free Data Software Available

The DxMONITOR Data Submission System(DDSS) is available free of charge to any laboratory interested in participating in the Veterinary Diagnostic Laboratory Reporting System (VDLRS).

To use the DDSS, data must first be captured by a laboratory in whatever manner works best for that particular laboratory. The summary totals of those data are then entered into a data entry screen which is provided as part of the DDSS. A computer file is automatically created for use in transferring the data. A reference guide leads the user through this process. Because the system was written within a software package called "Epi Info", a copy of this program and a user's guide are also included. Epi Info was developed by the Centers for Disease Control and Prevention, and the World Health Organization. It has many capabilities including data analysis, word processing, statistics, etc. Please contact the address on the inside front cover of this report for more information about the DDSS.

LabNEWS Article Submissions are Encouraged

Readers of the DxMONITOR Animal Health Report are encouraged to submit items suitable for the "LabNEWS." All articles should be typed double spaced. Photos/artwork should be camera ready. If possible, please provide your article on diskette and indicate what type of software was used to create/store the file (i.e., WordPerfect, Word Star). Send submissions to the address on the inside front cover of this report.

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Fort Collins, CO 80521-2586

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____ **DxMONITOR Animal Health Report***
(Quarterly report of VDLRS data)

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(An informational brochure)

____ **Report of the 1991 DxMONITOR Committee Meeting** (August 1991)

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